A STUDY ON CLINICO-IMMUNOLOGICAL PROFILE AND TREATMENT OUTCOME OF PSORIATIC ARTHRITIS"

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CERTIFICATE

This is to certify that this dissertation entitled **"A STUDY ON CLINICO-IMMUNOLOGICAL PROFILE AND TREATMENT OUTCOME OF PSORIATIC ARTHRITIS"** presented here is original work done by **Dr.R.RAGUNATHAN**, DM Post Graduate in the Department of Rheumatology, Madras Medical College and Rajiv Gandhi Government General Hospital, Chennai- 600003 in partial fulfillment of the university rules and regulation for the award of D.M. Branch IX- Rheumatology, under my guidance and supervision during the academic period from 2010-2013.

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DECLARATION

I, **Dr.R.RAGUNATHAN** hereby solemnly declare that this dissertation entitled **"A STUDY ON CLINICO-IMMUNOLOGICAL PROFILE AND TREATMENT OUTCOME OF PSORIATIC ARTHRITIS"** was done by me in the Department of Rheumatology, Madras Medical College & Rajiv Gandhi Govt. General Hospital, Chennai-3 during January 2011 to December 2012 under the guidance and supervision of Prof.Dr.S.Rukmangatharajan, MD., DM., FMMC., This dissertation is submitted to the Tamil Nadu Dr.M.G.R.Medical University towards the partial fulfillment of requirement for the award of D.M., Degree in Rheumatology.

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INDEX

ABBREVIATIONS

PsA	:	Psoriatic Arthritis
Anti-CCP	:	Anti cyclic citrullinated peptide
ACPA	:	Anticyclic Citrullinated Peptide Antibody
RF	:	Rheumatoid Factor
HIV	:	Human Immunodeficiency Virus
HLA	:	Human Leukocyte Antigen
KIR	:	Killer Immunog;obulim like Receptor
TNF	:	Tumor Necrosis Factor
IL	:	Interleukin
SpA	:	SpondyloArthroathy
TLR	:	Toll Like Receptor
Th	:	T helper cell
RA	:	Rheumatoid Arthritis
MMP	:	Matrix MetalloProteinase
TIMP	:	Tissue Inhibitor of Metallo Proteinase
hsCRP	:	high sensitive C-Reactive Protein
TGF	:	Transforming Growth Factor
VEGF	:	Vascular Endothelial Growth Factor
ANA	:	Anti Nuclear Antibody
GRAPPA	:	Group for Research and Assessment of Psoriasis and Psoriatic Arthritis
OMERACT	:	Outcome Measures in Rheumatoid Arthritis Clinical Trials

PASI	:	Psoriasis Activity and Skin Score
BASDAI	:	Bath Ankylosing Spondylitis Disease Activity Index
ESR	:	Erythrocyte Sedimentation Rate
DMARD	:	Disease Modifying Anti Rheumatic Drug
RCC	:	Rheumatic Care Centre
CASPAR	:	Classification criteria for Psoriatic Arthritis
ILAR	:	International League Against Rheumatism
ASO	:	Anti Streptolysin- O
ELISA	:	Enzyme Linked Immuno Sorbent Assay
SJC	:	Swollen Joint Count
TJC	:	Tender Joint Count
MASES	:	Maastricht Ankylosing Spondylitis Enthesitis Score

INTRODUCTION

Robert Willan, the British dermatologist described psoriasis as an independent disease in 18-th century.[1]The French Physician Baron Jean Louis Alibert first described the association between the psoriasis and psoriatic arthritis in 1918. [2]

Initial clinical features of PsA were described first by Wright V et al in 1959 and along with Moll they published the first classification criteria in 1973.[3] Psoriatic arthritis was included as a distinct arthritis in the classification of rheumatic diseases in 1964 by American Rheumatism Association.

Psoriatic arthritis is one of the diseases of SpA family and defined as inflammatory arthritis occurring in patients with psoriasis and negative test for rheumatoid factor commonly. It is a progressive and disabling disease and often associated with increased morbidity.[4]

According to one prospective study by Kane D et al, psoriatic arthritis constituted 13 % of new patients attending early arthritis clinic and progressive erosive change occurs in around 50 % of patients in the first few years.[5]

The exact prevalence of psoriasis and psoriatic arthritis is not known and the prevalence of psoriasis in general population is around 1 to 3 %. The incidence of arthritis in patients with psoriasis is between 5 and 7 %.

There are only few studies in psoriatic arthritis in India especially the immunological profile like anti-CCP antibodies in psoriatic arthritis, correlation of skin and arthritis. So we took this study to correlate the skin disease and arthritis as well as to study the immunological profile of patients with psoriatic arthritis.

AIMS AND OBJECTIVES

1) To study the clinical profile of patients with psoriatic arthritis.

2) To assess the correlation between skin disease and arthritis in patients with psoriatic arthritis.

3) To study the immunological profile of patients with psoriatic arthritis.

4) To assess the outcome of patients with psoriatic arthritis.

REVIEW OF LITERATURE

EPIDEMIOLOGY

The prevalence psoriasis and psoriatic arthritis have shown ethnic and geographic variation and more common in colder north (Europe) when compared tropics. The prevalence of arthritis in patients with psoriasis is about 8.47 percent according to a clinical study from South India.[7] The prevalence to cutaneous psoriasis in Europe varies from 0.6 to 6.5% and in US around 3.15% .[8] The exact prevalence of PsA status is unknown and according to various studies it ranges from 0.3 to 1% of population .The prevalence of psoriatic arthritis in patients with cutaneous psoriasis varies from 7% to 42%in number of studies.[6]

No sex predilection has been documented unlike other inflammatory arthritis and few studies have shown male preponderance.[9] Development of PsA may occur at any age but majority of patients are in the 3rd or 4th decade.

Wide variation in the prevalence in different population is mainly due to heterogeneity of the disease and lack of widely accepted diagnostic criteria for psoriatic arthritis. Because most epidemiological studies have been performed in Caucasians the

racial and ethnic associations is not well known. The risk of development of arthritis is more in patients with scalp psoriasis, nail dystrophy and intergluteal or perianal lesions .[10]

The poor prognostic factors are [11]

1) Erosions and polyarticular pattern at onset

2) Extensive skin involvement.

3) Strong family history of psoriasis

4) Disease onset before 20 years.

In majority of patients (approximately 67% of patients with PsA) skin disease precedes arthritis. Joint manifestations precede the cutaneous disease in around 15% of patients and both these condition occur within 12 months each other in the remainder population.[12]

Cutaneous psoriasis precedes the onset of arthritis by 9 to 10 years in patients with type 1 psoriasis (onset of psoriasis before 40 years).In patients with type 2 psoriasis (onset after 40 years) joint disease usually develops within one year of skin disease.[12] There is increased susceptibility to PsA with HIV infection and several studies showed the prevalence of 0.4 to 2%. These groups of

patients have severe skin and polyarticular disease often occurring simultaneously .[13]

PATHOGENESIS OF PSORIATIC ARTHRITIS

GENETIC SUSCEPTIBILITY

Based upon familial clustering of the disease, the propensity of PsA is influenced by heredity. The risk of development of PsA among first degree relatives of PsA is around 15% and for cutaneous psoriasis is 30-40%. The recurrence risk ratio (λ) of PsA in the sibling was found to be more than 27 and in psoriasis 4 to 11 .[14] According to twin studies ,the concordance rate for dizygotic twins is between 21 and 23 % and for monozygotic twins 62 - 70%.[15] Several studies have demonstrated that PsA is a polygenic, multi factorial disease with many susceptibility loci.

Based upon the linkage association studies the following loci are found to be associated with PsA.

I. HLA Association

1) HLA cw 06 carriers are associated with long time interval between the onset of psoriasis and PsA (Type 1 psoriasis).

2) HLA B- 38 and B-39 carriers have more peripheral arthritis.

3) HLA B-27, cw2 and DR w52 associated with spinal disease.

II. MICA A 9 Polymorphisms: MHC Class I chain related gene A (MICA) is also associated with increased susceptibility independent of HLA cW6 .

III. Other Loci associated with PsA : [16]

Gene	Chromosomes	Odds Ratio
KIR Alleles	5q33	1.1
TNF-308 A Alleles	6p21	1.96
IL-12 B	5q 33	1.1
IL-23 R	1p 31	1.70
IL-1 Gene cluster	2q 13	1.82
IL 2/IL 21	4q 27	1.37

Susceptibility for psoriasis

1) ***HLA Region:*** Strong association between cuteneous psoriasis and HLA-C region has been recognized. Elder demonstrated the psoriasis susceptibility region in MHC region – HLA cW6 often with linkage disequilibrium with HLA-B 57, HLA-B 37, HLA B13 .[17]

2) ***Non MHC Susceptibility Regions:*** PSORS regions on chromosome 4, 6, and 17 have been identified as non -HLA susceptibility regions based on whole genome scans.

ENVIRONMENTAL RISK FACTORS

1. Infection

The link between post streptococcal tonsillitis and subsequent guttate psoriasis especially in young patients with HLA cW6 positivity has been demonstrated.[18]The inflammatory process stimulated by super antigens and molecular mimicry between cutaneous antigens and streptococcal antigens are the explanation for this pathology.

2. Other risk factors

- HIV Infection
- Rubella Vaccination
- Recurrent oral ulcers
- Stressful life events
- Obesity

3. Deep Koebener Phenomenon

Trigger of episodes of joint inflammation due to joint locomotion is also found to be a precipitating event and in one study 24.6 % of patients with psoriatic arthritis have been shown a traumatic event before the onset of arthritis. [19]

4. Smoking

The temporal relationship between psoriasis, psoriatic arthritis and smoking has been demonstrated. It has been reported that history of smoking prior to onset of psoriasis, the duration between the psoriasis and the arthritis development decreases .The interval increases with smoking after onset of psoriasis.[20]

IMMUNOPATHOLOGY

Cutaneous Psoriasis

Interaction between innate and acquired immunity plays a major role in the formation of psoriatic plaques .[21] Interferon α plays a major role in psoriasis and up-regulation of IFN α signature genes by nucleic acids (both DNA and RNA) showed the central role of interferon. Binding of DNA released by stressed or apoptotic keratinocytes to LL 37 – cathelicidin an antibacterial peptide from kerotinocytes forms a complex. This complex binds to TLR 9 of plasmocytoid dentritic cells which in turn involved in the release of interferon α.[22]

Activated dermal dentritic cells by IFN α moves to the regional lymph nodes promote T cell differentiation to Th1 and Th17 cells. These cells move to the dermis via lymphatic and blood vessels. In the dermis Th1 cells release gamma Interferon and TNF

and Th17 cells produce IL1, IL 17, IL 22 and TNF. IL 22 stimulates keratinocytes proliferation and cathelicidin production. Keratinocytes secrete IL 1, IL 6, TNF and chemokines. Dentritic cells also induce proliferation of T lymphocytes and release IL 23 which is essential for survival of Th 17 cells.

Cross talk between the endothelial cells, fibroblast and keratinocytes lead to tissue remodeling and matrix molecule deposition and also there is marked angiogenesis in the dermis .[23]

Cutaneous lesions are characterized by epidermal hyperplasia, mono nuclear leukocyte infiltration in the papillary dermis, stratum corneum with neutrophils and dendrite cells .[24] Infiltration in epidermis with CD 8 + T cells and dermis with mixture of CD4 + CD 8 + cells occur in plaques.

Synovium

Prominent and striking vascular changes in the synovium are the most important aspect of psoriatic joint inflammation. Both light and electro-microscopy reveal endothelial cell swelling with marked thickening of the vessel wall, higher number of infiltrating CD163 + macrophages, increased number of vessels and more tortuous vascularity in the synovium of the psoriatic arthritis when compared to RA Synovium .[25]

Synovial biopsy reveal infiltration of inflammatory T, B cells and monocytes in a similar frequency as RA and digital image analysis of biopsy showed PsA synovium had lower number of plasma cells, but similar expression of TNFα, IL 1 β, IL6, IL18, MMPs and adhesion molecules.Increased in neutrophil Infiltration in Psoriatic arthritis synovial tissue compared to RA was also identified .[26]

Summarizing the histological appearance of PsA synovium marked vascularity with increased neutrophilic infiltrates and fewer T lymphocytes infiltrates are characteristic findings.

Enthesial Sites

Increased CD 8 + T cells expression was observed from enthesial sites in patients undergoing joint replacement surgery for psoriatic arthritis .[27]Biopsy from ethesitis site shows increased vascularity and cellularity predominantly macrophages infiltration.

Nail Disease

Nail lesions are more prevalent the psoriatic arthritis than in cutaneous psoriasis without arthritis. Presence of enthesis of DIP including tendon, lateral collateral ligaments are attached to both nail and adjacent periosteum and this explains the nail lesions more common in psoriatic arthritis .[28]

Cartilage Destruction and MMP:

Up-regulation of MMP in PsA synovium is evidenced by immuno histochemical studies showing MMP 9 localized to blood vessels cell wall where as MMP 1, 2, 3, TIMP 1 and TIMP 2 in the cellular and interstitial staining in synovial lining. Elevated MMPs to TIMP 1 in synovial tissue lead to cartilage destruction. Serum levels of MMP 3 serve as a biomarker of PsA activity .[29]

The biomarkers for arthritis in patients with psoriatic arthritis are[30]

1) CPII: C2C ratio – C- propeptide of type II collagen :collagen fragment neoepitopes.

2) Osteoprotegerin

3) MMP-3

4) hs-CRP

Bone Remodeling: [31]

Radiographic findings of PsA show altered bone modeling as bone resorption and new bone formation. Accumulation of large multi nucleated osteoclast in the resorption pits is demonstrated in PsA pannus bone junction. Upregulation of RANKL protein and decreased expression of osteoprotogerin were detected in synovium of PSA patients.

TGF β and VEGF are very important for new bone formation and BMP 2 and BMP 7 are up regulated at the areas of new bone formation.

Involvement of wnt Pathway and balance between wnt antagonist dickop 1 (DKK1) are very important in the disordered bone re modeling in PsA

Cytokines involved:[32]

The imbalance of pro inflammatory and anti inflammatory cytokines is responsible for synovitis.

Higher levels of Th1 Cytokines IL 2, Interferon γ in the synovium of PsA than in RA synovium are demonstrated. IL 1 and TNF are elevated in skin, synovium and joint fluid of PsA are also noted.

Patients with TNF α 308 Allele with higher levels of TNF have more erosions than the patients without this allele. Activated IL 23 / Th 17 pathway in patients with PSA is evidenced by increased levels of IL 17 in synovial fluid as well as increased circulating levels of Th 17 cells.

Involvement of both innate and acquired immunity with prominent role for Th 1, Th 17 cells and TNF are important in the pathogenesis of psoriatic arthritis.

PSORIASIS

Psoriasis is a chronic, complex, multifactorial inflammatory skin disease due to increased proliferative of keratinocytes in the epidermis with exaggerated epidermal cell turnover rate. It commonly manifests as a well demarcated erythematous plaque with silvery white scales on the elbow, scalp, knees, umbilicus intergluteal region and lumbosacral areas.

Signs and symptoms of psoriasis are[32]

1) Acute onset of small areas of red scaly lesions [macules, papules, plaques]

2) Worsening of longstanding erythematous scaly plaques.

3) Pain – especially in erythrodermic type in areas of traumatized plaques.

4) Pruritis – especially in guttate psoriasis.

5) Dystrophic nails.

6) Blepheritis and conjunctivitis

7) Recent streptococcal and viral infection

8) Trauma (Koebner phenomenon)

9) Precipitating drugs – antimalarials ,Beta blockers.

TYPES OF PSORIASIS

Psoriasis vulgaris (or) chronic stationary psoriasis:

a) Most common type

b) Involve scalp, retro auricular regions, extensor surfaces, umbilicus, genitals and lumbosacral areas.

Plaque Type:

Affects the extensor surface of knees, elbows, scalp and trunk.

Inverse Psoriasis:

a) Occurring over the flexural (or) intertriginous areas

b) Scaling is minimal.

Guttate psoriasis:

a) Small, erythromatosquamous plaques and papules

b) In children

c) Over the trunk

d) Sudden onset after two to three weeks of respiratory infection with beta hemolytic streptococci.

Pustular psoriasis

a) Generalized pustular psoriasis.

b) Localized

   i. Acrodermatitis continua suppurativa

   ii. Extensive lakes of pus merging to disseminated erythematous areas.

Erythrodermic psoriasis

Both vulgaris and pustular forms may progress to psoriatic erythroderma involving whole body.

Scalp psoriasis

Occurs in 50% of patients.

Nail psoriasis

Occurs in 20 – 50% of patients with psoriasis

Nail disease in psoriasis is divided into nail bed and nail matrix lesions. Nail matrix lesions present in nail plate are pitting, red spots in lunula, leukonychia and crumbling. The nail bed

changes are oil drop discoloration, splinter haemorrhages, hyperkeratosis, and onycholysis.

Mucosal (or) oral psoriasis

Presenting as severe ctheilosis with extending into surround skin.

Eruptive psoriasis

Involving upper trunk and upper extremities especially in younger patients.

Palmoplantar psoriasis

PSORIATIC ARTHRITIS

Classification criteria:

For the diagnosis of psoriatic arthritis, earliest criteria by Moll and Wright is the simplest and was used previously .[3]

Moll and Wright criteria are, Presence of psoriasis and

1. Inflammatory arthritis [peripheral, spondilitis or sacroiliitis]
2. absence of Rheumatoid factor

The CASPER criteria is the most validated and has high sensitivity and specificity of 98.7percent ,91.4 percent respectively for the diagnosis of early as well as late PsA .[34]

The diagnosis of PsA is made in the presence on inflammatory articular disease [joint, enthesis or spine] and at least three points

- Current psoriasis (2points), H/O psoriasis (1) or family H/O psoriatic skin disease (1).
- Nail changes (1) - pitting, onycholysis and hyperkeratosis.
- Negative RF (1)
- Dactylitis (1) current or previous episode.
- Juxta-articular new bone formation by X-ray (1).

Articular involvement

According to Moll and Wright, five types of articular involvement are

1) Predominantly DIP involvement
2) Asymmetric oligo-arthritis
3) Symmetric polyarthritis like R.A.
4) Arthritis mutilans
5) Predominant axial involvement.

This subtypes classification has limitations practically because high degree of overlap between the categories and axial involvement can be detected in nearly one third of patients and predominant spondylo arthropathy occurs in minority of cases.[35]and also duration of the disease at the time of study influences the pattern arthritis. Involvement of spine also increases with duration of the disease. After the correction of total number of joints involved ,there was no difference in symmetricity of arthritis observed between PsA and RA when comparing early and late RA and PsA. [36]

DIP arthritis

DIP predominant subgroup comprises 1- 16 percent of psoriatic arthritis and this pattern occurs in early course of the disease .[37]This type is commonly associated with nail dystrophy and dactylitis. DIP joints are involved frequently in with psoriasis (3.9percent) than in patients without psoriasis (0.3) .[38]

Asymmetric oligoarthritis

The frequency of this pattern at onset ranges from 11 to 70 percent. Majority of patients will progress to additional joint inflammation in the disease course. Lower limb arthritis and hand

joint involvement are more common and show male predominance.[35]

Symmetric Polyarthritis

This pattern has female predominance and prevalence of this pattern in PsA 3% at onset and leads to occur during longer disease course and these groups of patients have more erosive damage.[39]

The typical features of psoriatis polyarthritis are[8]

1) "ray pattern" of distribution

2) more degree of erythema

3) lower level of tenderness

4) enthesitis

5) spine involvement.

6) More proportion for involvement of interphalangel joint of thumb.

According to Danda et al,there is 84% chance of having psoriatic arthritis if there is disproportionate swelling of interphalangeal joint of the thumb.[40]

Arthritis Mutilans

The end stage of destructive erosive arthritis with disorganized joints and subluxation is called arthritis mutilans and leading to digital telescoping called opera glass fingers.

The prevalence of arthritis mutilans is <5% and has female predominance and associated with long standing disease.[41]

Spondyloarthropathy

The spondyloarthropathy predominant subtype is uncommon and constitutes 5% of patients and radiographic evidence of involvement of axial spine in 20 to 40% of PsA patients. The involvement of cervical spine is common and strong association with HLA – B27 noted .[42] Two main types of cervical spine involvement are ankylosing type like primary AS and erosive or inflammatory type leading to AA or sub axial instability.

The presence of asymmetric sacroiliitis, lower incidence of a zygapophyseal ankylosis and higher proportion of cervical spine involvement are differentiating features from primary AS.

Dactylitis

The swelling of entire digit due to flexor tenosynovitis and synovitis occurs in 30 – 40% of cases during the course of the illness and commonly involves feet.

Enthesitis

Inflammation at the site insertion of tendon, ligament, fascia, capsule in to the periosteum of the bone is called “enthesitis” and occurs in 20 to 40% of PsA patients during the course of the disease and presenting feature in approximately 4% of cases. The common sites are tendoachilles; planter fascia and ligamentous insertions to bony pelvis.

Peripheral edema

Asymmetric and predominantly lower limb peripheral edema can occur as a presenting feature or during the course of the illness. Extensor tenosynovitis and lymph edema are proposed mechanisms.[43]

SAPHO Syndrome

The components of this syndrome are synovitis, acne, pustulosis, hyperostosis, osteiitis occur in around 30% of patients and 67% of SAPHO patients have palmo plantar psoriasis or psoriasis vulgaris.[44]

Other uncommon features are

Chronic multifocal recurrent osteomyelitis

Onycho-pachydermo periostitis

Nail disease

Close association between nail and joint disease in patients with PsA have been demonstrated. The frequency of nail lesions in psoriasis without arthritis and psoriatic arthritis are 20 – 40% and 60 – 80% respectively. The onset of nail changes occurs usually 1 to 2 years before the onset of joint disease.[45] Patients with DIP arthritis have more nail changes. These are ridging, pitting, onycholysis, and hyperkeratosis. The presence of >20 pits differentiates patients with PsA from those of RA with psoriasis.[46]

JUVENILE PSORIATIC ARTHRITIS

Juvenile PSA in which onset of arthritis before 16th birthday constitutes less than 10% of chronic arthritis of children. Onset of arthritis precedes cutaneous psoriasis in 50% of cases.[47]

The characteristic features of Juvenile PSA

1) Female preparedness 2 to 3:1

2) Frequently mono or polyarthritis – commonly knee is the first affected joint.

3) Higher prevalence of chronic uveitis around 10 – 14% often with ANA positivity.

Two subgroups in Juvenile PSA

1) Onset around 2 years

- ❖ Female predominance
- ❖ Low prevalence of cutaneous psoriasis
- ❖ More oligoarticular pattern
- ❖ High prevalence of dactylitis
- ❖ 60% ANA positivity

2) Onset around 9.5 yrs:

- ❖ More axial disease, polyarticular pattern and enthesitis.

Overall prognosis of juvenile PsA is good and persistent disease activity and residual disability occur in 10% to 15% of patients.

Proposed diagnostic criteria for Juvenile PSA accounting to South wood and Associates:[47]

Definite: Arthritis onset before 16 years of age and plus either psoriasis (or) Three minor criteria

- ❖ Nail Pitting
- ❖ Psoriasis like rash

- ❖ Dactylitis
- ❖ Family history of psoriasis

Probable Juvenile PSA: Arthritis onset before 16 yrs of age plus two minor criteria.

ILAR classification criteria for juvenile PsA are [48]

Arthritis and psoriasis (or) arthritis pius two of the following three

1) Psoriasis in a 1-st degree relative
2) Nail changes
3) Dactylitis

Extraarticular features

1. Ocular inflammation commonly in the form of conjunctivitis. Prevalence of iridocyclitis is around 7 to 25% and more bilateral than in primary AS often in patients with axial involvement.
2. Inflammatory bowel (asymptomatic).
3. Urethritis
4. Oral ulceration
5. Aortic valve disease.
6. Hyperuricemia.
7. Raised ASO titer [9]

Auto antibodies in PSA

Rheumatoid factor positivity has been found in 5 – 10% of psoriatic arthritis patients.[42] Anti cyclic citrullinated peptide antibodies are demonstrated 6 to 10% of patients with psoriatic arthritis and it is associated with female preponderance and polyarticular pattern, DTP involvement, enthesitis and deformities and functional impairment of peripheral joints.[49] Antinuclear antibodies are positive in significant titer in around 10 – 14% of patients with psoriatic arthritis and there was no significant difference among the patients with ANA positive PsA and ANA negative PsA.[50]

IMAGING IN PSORIATIC ARTHRITIS

CONVENTIONAL RADIOGRAPHY

Peripheral joints

Psoriatic arthritis is charecterised by both osteoproliferative and osteodestructive lesions. Joint involvement is often oligoarticular, asymmetric and ray pattern. Hand joints are involved more commonly than feet with the ratio of 2:1. DIP joints often first affected, followed by PIP,MCP joints.

Proliferative changes: periosteal new bone formation along the shaft of metacarpal and metatarsals.

- If erosion occurs near this,it is termed “whiskering”.[51]
- Ivory phalanx” marked periosteitis especially great toe.
- New bone formation at enthesial sites

Osteodestructive changes

- Ill-defined,irregular,marginal erosions more common in DIP joints rather than wrists.[52]
- More common in polyarthritis and long standing disease.
- Prevalence of erosions between 35 and 70 percent.[53]
- Pencil in cup deformity especially in mutilans variant.

Other features are

- Soft tissue swelling,joint space narrowing
- Ankylosis.

Axial skeleton:[54]

1) Asymmetric sacroiliitis often bilateral
2) Spotty,asymmetric involvement of spine most frequently in the cervical region.

3) Chunky syndesmophytes (nonmarginal) or paraspinal ossification distributed throughout the spine in asymmetric fashion.

4) Zygapophyseal joint involvement less severely and less frequently.

5) Squarring of vertebra and corner osteitis are very uncommon.

6) Atlantoaxial subluxation rarely.

MAGNETIC RESONANCE IMAGING

MR imaging clearly demonstrates the extent and severity of joint pathology. Subclinical involvement of peripheral and axial joints as well as underlying pathology is revealed by MR imaging. It is a very sensitive tool for the detection of spondylitis and sacroiliitis in the pre erosive phase.[55] The pathgnomonic of psoriatic arthritis is bone edema especially in the diaphyseal region.Fat suppressed T2 weighted images of the periarticular soft tissues i.e. enthesitis are usually the first changes in the psoriatic arthritis.

Charecteristic MRI features of psoriatic arthritis are bone marrow edema, periosteitis, enthesitis, dactylitis, tenosynovitis, synovitis, onychopathy and spondylitis.

ULTRASONOGRAPHY

Doppler ultrasonography and high frequency transducers are very much useful for the assessment of dactylitis and enthesitis. These are much more sensitive than MRI in the detection of early enthesitis.[56]

MEASUREMENT OF DISEASE ACTIVITY IN PSORIATIC ARTHRITIS

Evaluation of clinical domains of PSA from peripheral arthritis to spondylitis is necessary for assessment of disease activity. Accurate measurement of disease activity is necessary for monitoring the treatment response and for observational studies of psoriatic arthritis and research trials.[57]

According to GRAPPA-OMERACT recommendations, the following are the core set of domains which are to be assessed and measured in the patients with psoriatic arthritis.[58]

Domains included in the inner circle of core set are:

1) Skin activity
2) Pain
3) Peripheral joint activity
4) Patient global assessment
5) Health related quality of life

6) Physical function

Domains in the outer circle are

1) Spinal disease
2) Nails
3) Dactylitis
4) Enthesitis
5) Physician global
6) Fatigue
7) Nail
8) Radiology

Domains which are placed for research studies

1) MRI
2) CT
3) Ultrasound
4) Participation
5) Tissue analysis

Peripheral joint assessment

ACR response criteria and Psoriatic arthritis response criteria (PsARC) are the instruments commonly used to assess the treatment efficacy and in follow up studies. The PsARC measures swollen joint count (SJC), tender joint count (TJC), Physician global assessment (on a 1 – 5 Linkert assessment scale) patient global assessment (on 1 – 5 Linkert scale).[59]

Psoriatic arthritis response criteria is detected with reduction in SJC and or TJC of ≥30% along with reduction of at least one unit in Linkert scale of Pt.GA (or)PGA. The patient is said to fulfill PsARC when there is improvement in two of four items (one must be joint the count) without worsening of any measure.

Joint count of 66 swollen joints and 68 tender joints are used for assessment because it includes a majority of joints involved in PsA.[60] The 66 swollen counts included are TMJ, sternoclavicular, acromioclavicular, shoulder, elbow ,wrist, MCP, PIP, DIP joints of both upper limbs as well as both, knee, ankle, subtalar, MTP and IP joints of the toes and for 68 tender joint limb includes both hip joints.

Assessment of skin disease

Cutaneous disease is a major feature of psoriatic arthritis and is responsible for low quality of life. The evaluation of skin involvement is by two methods:

1) Subjective – Patient and physician global

2) PASI.[61]

PASI score was studied extensively and validated tool with good reliability and reproducibility. The limitations of PASI are

less sensitivity to change and decreased performance especially in patient with less degree and extent of skin involvement of less than 10% of body surface area and poor correlation with quality of life measures . PASI is said to be gold standard despite its limitations.

PASI – morphologic scoring of psoriasis is done by evaluating three parameters namely erythema, induration and scaling and these are graded into four grades according to the severity: 0 – Nil; 1 – mild; 2 – moderate; 3 – severe; 4 – very severe. Addition of these scores for the individual sites is multiplied by the grading for area wise percentage of involvement including head and neck, upper limbs, trunk, lower limbs.

The grading of area of skin involvement with psoriasis in each area:

0 - No

1 - <10% of involvement

2 - 10 – 29%

3 - 30 – 49%

4 - 50 – 69%

5 - 70 – 89%

6 - $\geq$90%

For individual site value A to D is derived by multiplying the grade of area involvement and morphologic score with correction factor of 0.1, 0.2, 0.3 and 0.4 for head and neck, upper limb, trunk and lower limbs respectively.

PASI = A + B + C + D

A = 0.1 X [Eh + Ih + Sh] x area grading

B = 0.2 X [Eu + Iu + Su] x area grading

C = 0.3 X [Et + It + St] x area grading

D = 0.4 X [El + Il + Sl] x area grading

Correction factor individual region used because body regions – head and neck, upper limb, trunk and lower limbs represent 10%, 20%, 30% and 40% of total body surface area respectively.

PASI score varies between 0 – 72 and; in mild disease <10, moderate disease 10 – 40.

Assessment of Dactylitis

Sausage finger (or) dacylitis is a characteristic feature in patient with severe and active psoriatic arthritis and manifesting as uniform swelling of entire digit due to combination of tenosynovitis, enthesitis, synovitis and soft tissue edema.[62]

Clinical assessment of dactylitis by two methods:

1) Presence or absence
2) Leeds Dactylitis Index.[63]

Leeds dactylitis index (LDI) measures both circumference and tenderness of the swollen figure and difference of 10% in circumference between the involved and non-dactylitic digit is taken as cut off. LDI is a valid tool for assessment of dactylitis and has good inter observer reliability.

Enthesitis assessment

It is defined as the inflammation at the site of insertion of ligament, fascia, tender and capsule into the periosteum of the bone and is a common feature PSA and prevalence is around 30 – 50%.

The instruments used in enthesitis assessment are Newcastle Enthesitis Index (NEI) by Mander[64]and Maastricht AS enthesitis score(MASES).[65]

MASES is a valid, simple and reliable tool and includes 13 sensitive and specific sites of enthesitis and given the score of 0 and 1 for tenderness. The sites are spinous process of fifth lumber vertebra, proximal Achilles insertion on both sides,bilateral iliac crests and anterior and posterior iliac spines, first and seventh costo chondral junction on both sides.

Spine assessment

Involvement of spine in PsA is heterogeneous and less severe than in primary ankylosing spondylitis and varies from 40 – 51%. The measurement of disease activity by BASDAI, functional ability by BASFI and assessment of spinal mobility by BASMI.[66]

BASDAI is combination of set of visual analogue scales of 6 items including pain, stiffness and fatigue.

BASDAI correlates well with the patients perception of disease activity, but does not discriminate between peripheral and spine disease activity .[67]

Patient Global Assessment

This is included in the inner circle of corset domains for disease assessment. This is useful to assess the patient discomfort and is more patients oriented clinical assessment. This is included in the assessment measures like PsARC, ACR response criteria and Disease Activity Score. PGA is measured by means of either visual analogue scale (0 to 100) for joints and 5 point linkert scale by asking question as "How would you rate the symptoms over the past 7 days" and 0 in VAS or linkert scale as no symptoms and 100 or 5 for very severe symptoms by using drawing vertical lines in VAS and making circle in linkers scale.[68]

Physician Global Assessment

This is measured in the identical manner to PtGA using Linkert scale for PsARC.

Assessment of Nail changes

The commonly used tools for nail disease assessment are NAPSI [69]and modified NAPSI.[70] The m-NAPSI is a simple, objective instrument for psoriatic nail assessment.

Minimal Disease Activity:[71]

This concept is developed by Coates et al and reviewed by OMERACT towards the 'treatment to target' in patients with psoriatic arthritis and the patient is said to have MDA if they have 5 of 7 desired criteria namely

- Swollen joint count ≤1,
- Tender joint count ≤1,
- PASI ≤1, (or)body surface area ≤3,
- PGA VAS ≤20,
- Patient pain VAS ≤15,
- Tender entheseal point ≤1
- HAQ ≤0.5.

OUTCOME OF PSORIATIC ARTHRITIS

Psoriatic arthritis is a progressive disease in major proportion of patients and in spite of clinical improvement, progressive erosive disease was observed in 47% of patients during 2 years of follow up, in one study.[72]

Markers (or) predictive factors for the progressive disease are:

1) Polyarticular pattern at onset (five joint effusions or more)[73]
2) HLA DQ Cw3
3) HLA B39
4) HLA B27

Long term outcome assessment studies have demonstrated increased morbidity and mortality in patients with psoriatic arthritis. In one study deforming arthritis was documented in 40 – 57% of patients, spinal involvement in 20 – 40% of patients and 11% to 19% were disabled and there is increased mortality when compared to background population.[74]

Increased mortality rate in patients with psoriatic arthritis and standardized mortality ratio of 1.36 were shown in a hospital cohort study.[75]

The common causes of mortality in patients with psoriatic arthritis are respiratory disease, neoplasia, cardiovascular disease and predictors of mortality are increased ESR, radiologic damage, prior use of DMARDS and steroids.[76]

MATERIALS AND METHODS

PLACE OF THE STUDY

Department of Rheumatology, Rajiv Gandhi Govt General Hospital & Madras Medical College, Chennai-3.

DESIGN OF THE STUDY

Prospective analytical study

PERIOD OF THE STUDY

2 years -From January 2011 to December 2012.

ETHICS COMMITTEE APPROVAL

Approval from hospital ethics committee was obtained before starting the study.

CONSENT

A clearly written informed consent on their own language was taken from all patients and from their parents in case juvenile PsA

MATERIALS

110 consecutive patients attending RCC OPD and Rheumatology wards, RGGGH, Madras Medical College, and Chennai-3 from January 2011 to December 2012 with clinical

features suggestive of psoriatic arthritis during the period of study were underwent detailed clinical examination along with family history. All the data regarding every patient was recorded in a separate proforma made for each patient. All the adult patients fulfilling CASPAR classification criteria and children fulfilling

ILAR criteria for Juvenile psoriatic arthritis are diagnosed to have psoriatic arthritis.

INCLUSION CRITERIA

1) Adults who are fulfilling CASPAR classification criteria for psoriatic arthritis

2) Children fulfilling ILAR criteria for Juvenile psoriatic arthritis

EXCLUSION CRITERIA

1) Reactive arthritis

2) Rheumatiod arthritis

3) Enteropathic arthritis

4) Crystal arthritides

METHODS

Each patient underwent detailed clinical history regarding age of onset of joint symptoms, skin manifestations, red eyes, enthiseal sites pain, low back pain, neck pain, family history. Detailed clinical examination of musculoskeletal system, eyes, nails, skin, scalp and other hidden sites for psoriasis were done.

Demographic data of all patients were recorded in the proforma especially about which system was first involved and duration of symptoms. They are categorised into having simultaneous onset if the interval between onset the skin and joint manifestations are less than three months.The severity of psoriasis was assessed and documented based on Psoriasis Activity and Severity Index (PASI) score at the baseline.Nails were examined for the lesions in the nail bed or nail matrix. For doubtful cases of diagnosis of psoriasis, we obtained opinion from our dermatology colleagues.

All the patients underwent detailed ophthalmic evaluation especially for present or past evidence of uveitis from Regional Institute of Ophthalmology, Chennai. Identical patients were classified into defined arthritis type according to Moll and Wright based on the predominant musculoskeletal features.

All entheseal sites were examined especially the13 sites for MASES. Dactylitis was diagnosed based upon the history and examination.Conventional X- ray of the hands, feet and other region like cervical spine, dorsolumbar and sacroiliac joints according to the symptoms at baseline.

At baseline all the patients underwent haematological, biochemical including serum uric acid, and immunological investigations. Analyses of RF, CRPand ASO titre were done by latex agglutination method in all patients. Anti-CCP antibodies were analysed in 82 patients by ELISA method (Genesis lab, anti-CCP 2 against rat fillagrin antigen). ANA by ELISA method was done in 70 patients.

Analysis for identification of HLA B27 was done in patients (28 patients) with axial involvement by microlymphocytotoxicity.

ANALYSIS

For assessment of the disease activity the following measures were used at baseline, one year and at two years.

1) Skin : PASI (at baseline only)

2) Peripheral Arthritis : 66 SJC, 68 TJC.
Patient Global Assessment
Physician Global Assessment

3) Enthesitis : MASES

4) Dactylitis : Present or absent

5) Spinal disease : BASDAI

For the follow up and outcome study all the patients are categorized into 4 groups according to the time of entry. First group (37) of patients were followed and assessed at the end of 1 year and 2 years. Totally 73 patients were followed and assessed at the end of 1 year (1-st, 2-nd and 3-rd group).

The following are the treatment details for the patients

1) Methotrexate only : 92
2) Methotrexate + Sulphaslazine : 3
3) Sulphasalazine only : 2
4) Etanercept + methotrexate : 4
5) Etanercept +Cyclosporine : 1
6) Inflixamab + methotrexate : 1
7) Intra articular steroids only : 2
8) No DMARD : 5

STATISTICAL ANALYSIS

All the data from proforma were transferred to statistical analysis using SPSS version 16. Mean for continuous data and proportion for discrete data were calculated. Student t test was used for comparison of mean values in between groups and chi-square test and Fisher's exact test were employed to compare the proportion between the groups. At a level of 95 % confidence interval and p value of less than 0.05 was considered as statistically significant.

RESULTS

Totally 110 patients were included for the study over two years period. Out of these 61 (55.5 %) were males and 49 (44.5 %) were females.

Table-1: Age distribution

Age group (years)	Frequency	Percent
<16	2	1.8
16- 20	4	3.6
21 – 30	20	18.2
31 – 40	33	30.0
41 – 50	32	29.1
51 – 60	14	12.7
> 60	5	4.5
Total	**110**	**100.0**

Lowest age of the patient in our study was 9 years and highest was 70 years.

Mean age of the patient was 39.55 years.

Majority of the patients were in between 3rd to ^{5th}decade.

Figure-1: Sex distribution

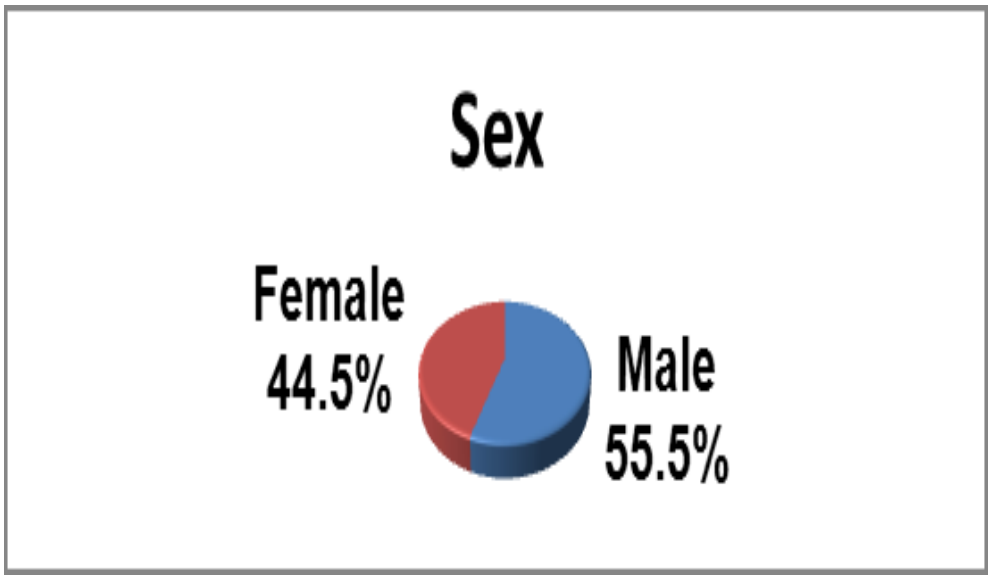


Fig-2: First system involved.

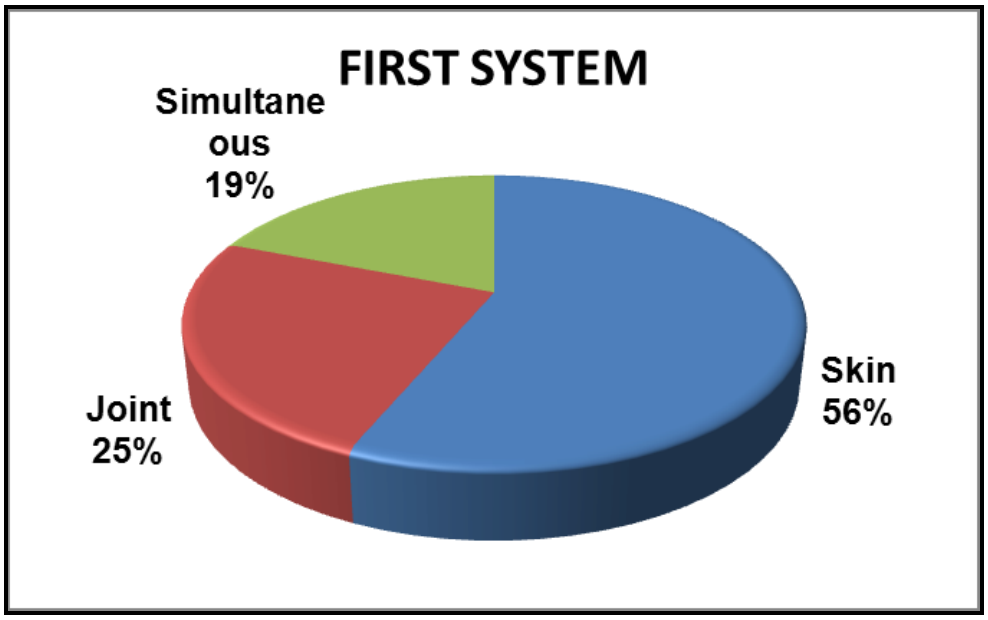
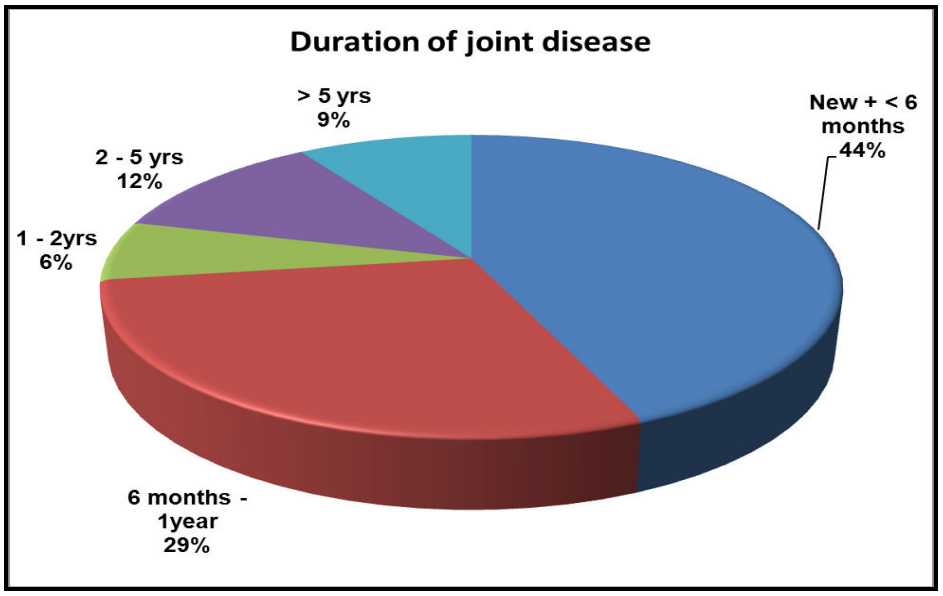
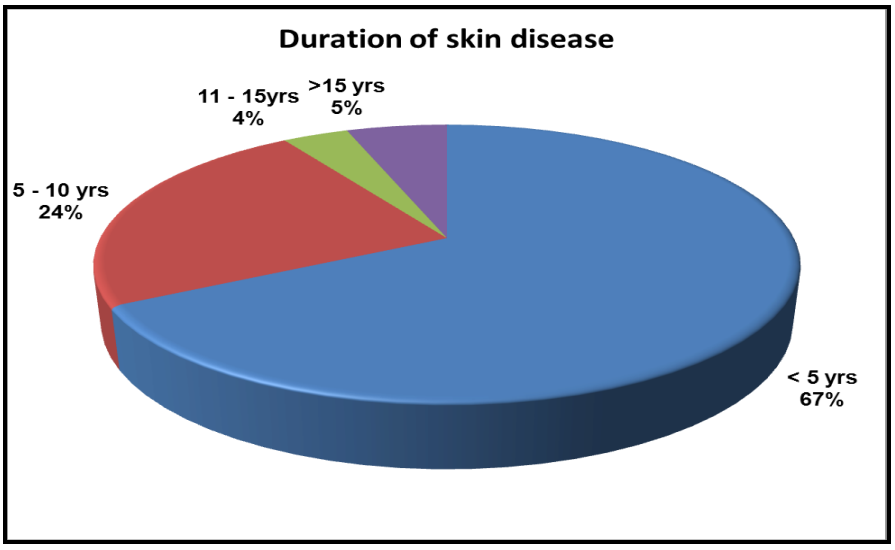


Fig -3: Duration of Arthritis.



Majority of patients with arthritis presented with the duration of less than six months , duration arthritis of more than five years in 9.1 % .

Fig 4. Duration of psoriasis.



Duration of skin disease varied from newly diagnosed to more than 15 years (5.5%). Majority of patient presented with less than 5 years (67.3%).

Table-2: Duration of arthritis Vs duration of psoriasis

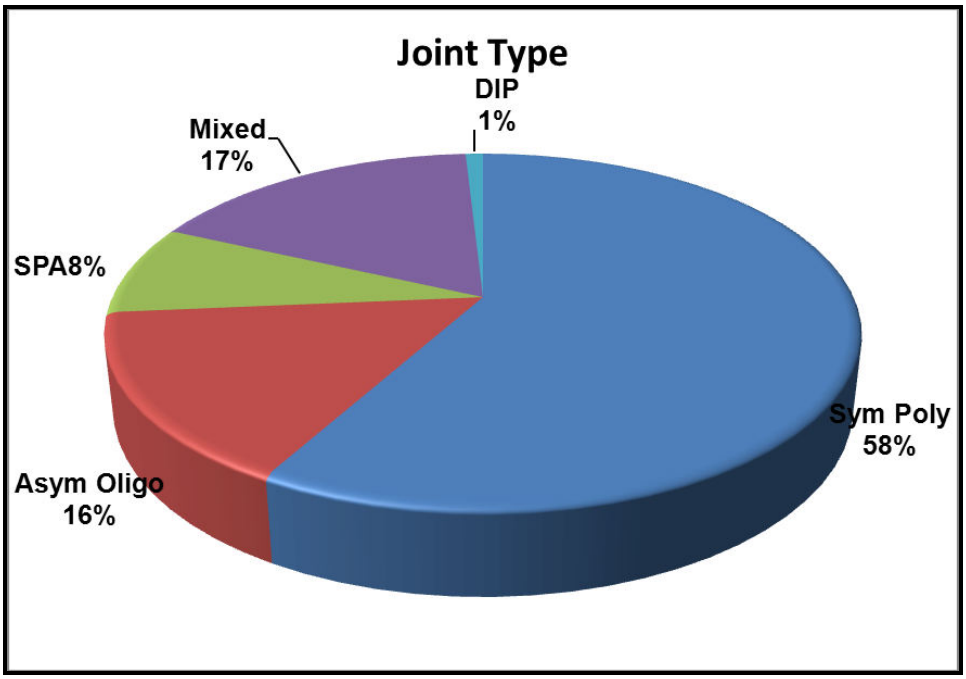
Duration of joint disease		Duration of skin disease				Total
		< 5 yrs	5 - 10 yrs	11 - 15yrs	>15 yrs	
< 6 months	Count	35	8	2	3	48
	Row %	72.9%	16.7%	4.2%	6.3%	100.0%
	Col %	47.3%	30.8%	50.0%	50.0%	43.6%
6 months - 1year	Count	22	9	0	1	32
	Row %	68.8%	28.1%	.0%	3.1%	100.0%
	Col %	29.7%	34.6%	.0%	16.7%	29.1%
1 - 2yrs	Count	3	3	1	0	7
	Row %	42.9%	42.9%	14.3%	.0%	100.0%
	Col %	4.1%	11.5%	25.0%	.0%	6.4%
2 - 5 yrs	Count	9	3	1	0	13
	Row %	69.2%	23.1%	7.7%	.0%	100.0%
	Col %	12.2%	11.5%	25.0%	.0%	11.8%
> 5 yrs	Count	5	3	0	2	10
	Row %	50.0%	30.0%	.0%	20.0%	100.0%
	Col %	6.8%	11.5%	.0%	33.3%	9.1%
Total	Count	74	26	4	6	110
	Row %	67.3%	23.6%	3.6%	5.5%	100.0%
	Col %	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests	Value	P-Value
Fisher's Exact Test	12.373	0.292

Majority of patients with arthrtis presented to the hospital with in 6 months (43.6 %) and of them 72.9% of patients had skin disease of less than 5 years of duration and this is not statistically not significant.

TYPES OF PSORIATIC ARTHRITIS

Fig-5: Types of arthritis.

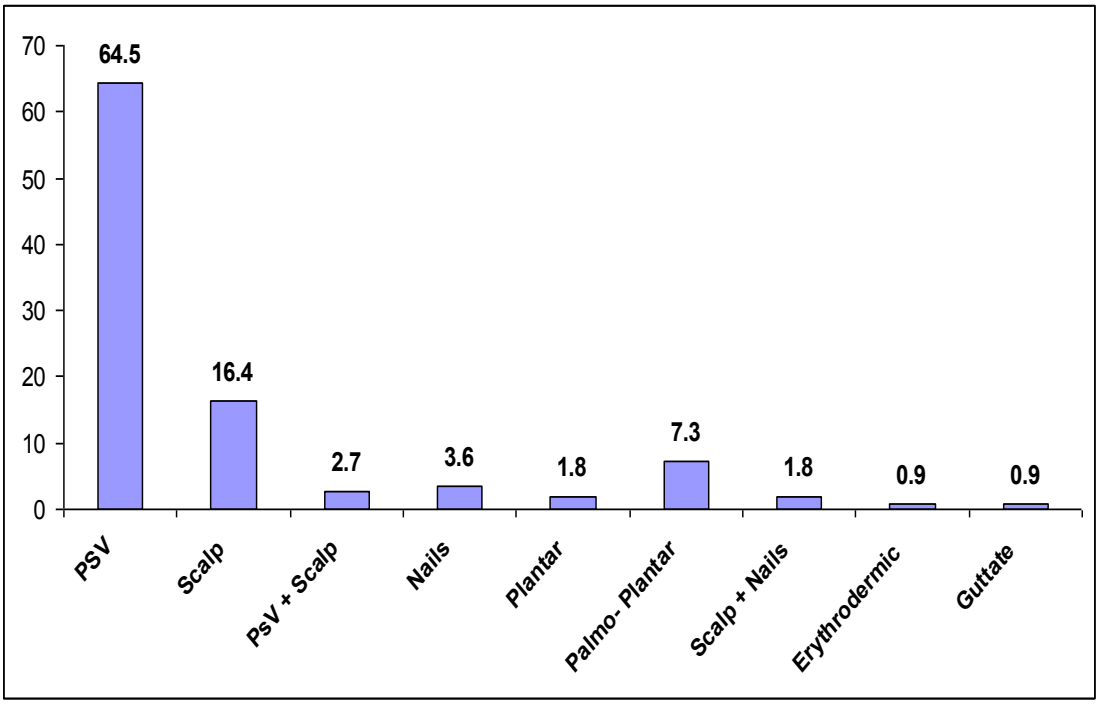


The commonest pattern of arthritis observed in our study was symmetric polyarthritis in 64 (58.2%) cases. Mixed pattern of arthritis were observed in 17.3%. Asymmetric oligoarthritis constituted about 17 (15.5%) patients. Predominant axial disease was observed in 9 (8.2%) patients and predominant DIP arthritis 0.9% of cases.Arthritis mutilans was observed in one patient in the mixed type.

TYPES OF PSORIASIS

In our study the commonest type of psoriasis observed was psoriasis vulgaris in 71 (64.5%) patients. Isolated scalp lesions were observed in 18 (16.4%) of patients.Erythrodermic and guttate varieties constituted about 0.9 % each.Isolated nail involvement with family histoty of psoriasis occurred in 4 (3.6%) cases.Nail lesions were seen along with other types of psoriasis occurred in more number of ceses.

Fig-6: Types of psoriasis.



SEVERITY OF SKIN DISEASE AT BASELINE:

Actitivity of skin disease was assessed for 106 patients at the time of entry to correlate with the joint disease. Four patients had only nail lesions suggestive of psoriasis with family history of psoriasis.

Majority of patients with psoriasis had PASI score of less than 5 (64 patients-60.4. %).Two patients (1.9 %) had severe skin disease i.e PASI more than 30.

Table-3: Severity of skin disease at baseline

PASI Base line	Frequency	Valid Percent
<5	64	60.4
5-10	24	22.6
11-20	13	12.3
21 – 30	3	2.8
> 30	2	1.9

Table-4: Comparison of skin score among the various types of arthritis

Joint Type		PASI Base line					Total
		<5	**5-10**	**11-20**	**21 - 30**	**> 30**	
Sym Poly	Count	39	16	7	1	1	64
	Row %	60.9%	25.0%	10.9%	1.6%	1.6%	100.0%
	Col %	60.9%	66.7%	53.8%	33.3%	50.0%	60.4%
Asym Oligo	Count	8	5	3	0	0	16
	Row %	50.0%	31.3%	18.8%	.0%	.0%	100.0%
	Col %	12.5%	20.8%	23.1%	.0%	.0%	15.1%
SPA	Count	7	0	1	0	0	8
	Row %	87.5%	.0%	12.5%	.0%	.0%	100.0%
	Col %	10.9%	.0%	7.7%	.0%	.0%	7.5%
Mixed	Count	10	2	2	2	1	17
	Row %	58.8%	11.8%	11.8%	11.8%	5.9%	100.0%
	Col %	15.6%	8.3%	15.4%	66.7%	50.0%	16.0%
DIP	Count	0	1	0	0	0	1
	Row %	.0%	100.0%	.0%	.0%	.0%	100.0%
	Col %	.0%	4.2%	.0%	.0%	.0%	.9%
Total	Count	64	24	13	3	2	106
	Row %	60.4%	22.6%	12.3%	2.8%	1.9%	100.0%
	Col %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests	Value	P-Value
Fisher's Exact Test	16.476	0.420

Majority of symmetric polyarthritis patients (60.9 %)had skin score of less than 5 and other subtypes of arthritis also had less severe skin disease activity.

Table-5: Comparison of skin type vs arthritis type

Skin Type		Joint Type					Total
		Sym Poly	Asym Oligo	SPA	Mixed	DIP	
PSV	Count	42	13	2	13	1	71
	Row %	59.2%	18.3%	2.8%	18.3%	1.4%	100.0%
	Col %	65.6%	76.5%	22.2%	68.4%	100.0%	64.5%
Scalp	Count	11	1	4	2	0	18
	Row %	61.1%	5.6%	22.2%	11.1%	.0%	100.0%
	Col %	17.2%	5.9%	44.4%	10.5%	.0%	16.4%
PSV + Scalp	Count	3	0	0	0	0	3
	Row %	100.0%	.0%	.0%	.0%	.0%	100.0%
	Col %	4.7%	.0%	.0%	.0%	.0%	2.7%
Nails	Count	0	1	1	2	0	4
	Row %	.0%	25.0%	25.0%	50.0%	.0%	100.0%
	Col %	.0%	5.9%	11.1%	10.5%	.0%	3.6%
Plantar	Count	0	0	1	1	0	2
	Row %	.0%	.0%	50.0%	50.0%	.0%	100.0%
	Col %	.0%	.0%	11.1%	5.3%	.0%	1.8%
Palm plantar	Count	5	2	1	0	0	8
	Row %	62.5%	25.0%	12.5%	.0%	.0%	100.0%
	Col %	7.8%	11.8%	11.1%	.0%	.0%	7.3%
Scalp + Nails	Count	2	0	0	0	0	2
	Row %	100.0%	.0%	.0%	.0%	.0%	100.0%
	Col %	3.1%	.0%	.0%	.0%	.0%	1.8%

Skin Type		Joint Type					Total
		Sym Poly	Asym Oligo	SPA	Mixed	DIP	
Erythrodermic	Count	1	0	0	0	0	1
	Row %	100.0%	.0%	.0%	.0%	.0%	100.0%
	Col %	1.6%	.0%	.0%	.0%	.0%	.9%
Guttate	Count	0	0	0	1	0	1
	Row %	.0%	.0%	.0%	100.0%	.0%	100.0%
	Col %	.0%	.0%	.0%	5.3%	.0%	.9%
Total	Count	64	17	9	19	1	110
	Row %	58.2%	15.5%	8.2%	17.3%	.9%	100.0%
	Col %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests	Value	P-Value
Fisher's Exact Test	48.627	0.051

Although psoriasis vulgaris is the commonest type in symmetric polyarthritis (65.6%)and scalp psoriasis in SPA (44.4%),this not statistically significant.(p0.051).

Table-6: Radiographic abnormalities at entry

Change	Frequency	Percentage
Soft tissue swelling	28	25.5
Joint space narrowing	17	15.4
Sacroiliitis	24	21.8
Erosions	5	4.5
C-spine abnormalities	7	6.4
Periosteal reaction	2	1.8
Osteopenia	1	0.9

Table-7: Extra-articular features

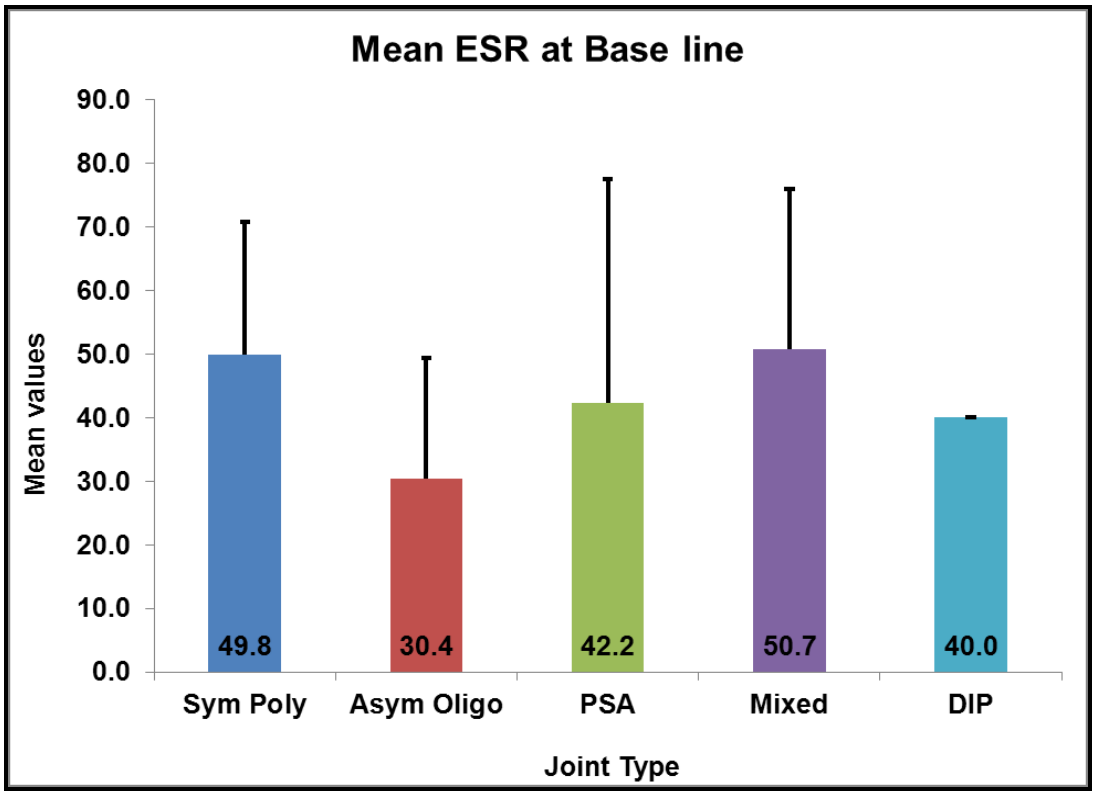
	Frequency	Percentage
Anterior uveitis	4/110	3.6
Hyperuricemia	5/110	4.5
ANA positivity	10/70	14.2
Raised ASO titer	9/110	8.1
RF positivity	7/110	6.3
Anti-CCP positivity	8/82	9.7
HLA B 27	5 /28	17.8

Table-8: Correlation between skin and enthesitis index

		MASES_Base line
PASI_Base line	Correlation	0.585
	P-Value	0.000
	N	106

There was strong statistically significant correlation was observed between skin disease activity and enthesitis indices.

Fig-7 : Mean ESR at Baseline



Mean ESR value of patients with mixed type is 50.74 (highest)and in asymmetric oligoarthritis is 30.41.

Table09: Correlation of skin disease activity with joint disease activity:[at enyry]

		PASI Base line
66 SJC Base line	Correlation	0.046
	P-Value	0.639
	N	106
68 TJCBase line	Correlation	0.091
	P-Value	0.355
	N	106
ESR Base line	Correlation	0.198
	P-Value	0.042
	N	106

[PASI was not calculated in 4 patients with isolated nail disease]

There was a positive correlation (0.091) observed between tender joint count and PASI at entry but this was not statistically significant. Statistically significant correlation (p=0.042) was noticed between baseline ESR and PASI.

Table-10: Outcome at 1 Year

Outcome at 1 year	Frequency	Valid Percent	Mean ESR at Baseline
PsARC	42	57.5	49.62
Persist	14	19.2	46.71
Flare	2	2.7	53.50
Poly	3	4.1	41.67
Lost to Follow up	12	16.4	46.33
Total	73	100.0	48.30

During follow up and assessment at one year, out of 73 patients 42 (57.5%) attained PsARC response,14 cases (19.2%) showed persistent disease activity, flare in 2 (2.7%)cases and progression to polyarthritis in 3 (4.1%).12 patients (16.4%) lost the follow up. Mean baseline ESR in patients who had PsARC response is lower than who had flare .

Table-11: Outcome at 2 years :

Outcome at 2 years	Frequency	Percent	Mean ESR at baseline
PsARC	18	48.6	45.22
Persist	5	13.5	59.60
Flare	3	8.1	55.00
Poly	2	5.4	46.50
Lost to Followup	8	21.6	45.50
MDA	1	2.7	8.00
Total	37	100.0	47.08

Totally 37 patients were enrolled for follow-up for 2 years, 29 cases were assessed at the end of two years (8 patients lost to follow-up). 18 patients showed PsARC response and one patient attained Minimal Disease Activity response and persistent disease activity in 5 cases (13.5%).

When comparing the baseline ESR among those groups, it was lower in PsARC and MDA positivity than in patients with flare or persistent disease activity.

Table-12: Analysis at the end of two years :

	ACTIVITY AT THE END	N	Mean	Std. Deviation	P-Value
66 SJC_Base line	PsARC +ve	18	10.72	3.675	0.098
	PsARC -ve	10	8.09	4.527	
68 TJC_Base line	PsARC +ve	18	13.22	4.305	0.090
	PsARC -ve	10	10.00	5.495	
ESR_Base line	PsARC +ve	18	45.22	22.254	0.471
	PsARC -ve	10	53.70	20.519	

At the end of follow up period of two years, when comparing the patients who showed positive PsARC with negative PsARC the baseline ESR in the positive group (45.22 vs. 53.70) was lower although it is statistically not significant(p=0.471).

Table-13: Comparision of anti-CCP(ACPA) positive vs negative:

	Patient group	N	Mean	Std. Deviation	P-Value
66 SJC Base line	ACPA +ve	8	12.13	4.291	0.005
	ACPA -ve	74	7.38	4.558	
68 TJC Base line	ACPA +ve	8	14.00	4.986	0.025
	ACPA -ve	74	9.46	5.473	
ESR Base line	ACPA +ve	8	60.50	21.527	0.076
	ACPA -ve	74	45.14	23.449	

Anti-CCP antibodies by ELISA method was done in 82 patients,out of which it was positive in 8 cases(9.7%). When comparing these two groups, actively inflamed joint count (significant p=<0.05) and ESR at baseline were higher among anti-CCP positive patients.

Table-14: Imaging Abnormalities

		Patient group				Total	
		ACPA +ve		ACPA -ve			
		N	%	N	%	N	%
Imaging	Normal	0	.0	47	100.0	47	100.0
	Abnormal	8	22.9%	27	77%	35	100.0
Total		8	9.7%	74	90.3%	82	100.0

Chi-Square Tests (Fisher's Exact Test)	Value	P-Value
Imaging * Antibodies	-	0.010

When comparing the imaging abnormalities, all patients with anti-CCP positivity had radiological damage which was statistically significant (p=0.01).

DISCUSSION

In our study of 110 patients, majority of them in the age group of 3rd to 5th decade constituted around 70%. Lowest age was 9 years and highest age was 70 years. The mean age of the patient with psoriatic arthritis was 39.55 years.

Observations	Our study(110)	Rajendran CP et al[9] 2003 (116)	Shah et al[77]1995 (102)	Pranesh et al[78]1998 (12)
Mean age (yrs)	39.55	40.9	38.17	40
Sex ratio	1.2:1	2:1	1.8:1	1:2
Arthritis precede skin disease (%)	24.5	12.1	5.8	8.3
Arthritis after skin (%)	56.4	50.8	63.8	50
Simultaneous onset	19.1	37.1	19.7	41.7

Out of 110 cases ,slight male preponderance of 1.2: 1 was observed and the similar finding was observed by Rajendran CP et al and showed male to female ratio of 2: 1. But other epidemiological study by Gladmann et al and Kammer et al showed equal sex incidence.[35,79] Female preponderance in psoriatic arthritis was reported by Pranesh et al.[78]

Skin disease preceding arthritis was seen in 56.4% like other studies by Rajendran CP et al and Shah et al. Arthritis preceded the psoriasis in 24.5% of cases and simultaneous onset (within 3 months of onset of each other) was noted in 19.1% of patients.Majority of patients with arthritis presented to the hospital within 6 months of disease onset (43.4%), among these cases 72.9% of patients had the skin disease duration of less than 5 years.

Majority of patients in all types of psoriatic arthritis had the skin disease duration of less than 5 years (67.3%). Our study had shown that the prevalence of arthritis in patients with psoriasis duration of more than 10 years is low (9.1%). This was also shown by Prasad et al previously.[7] Occurrence of Arthritis in patients with long standing skin disease is less common.

Family history of Psoriasis was found in 6% of cases but it was observed in 27.5% of patients in the previous study.[7] Based upon recent genetic studies among the Psoriasis patients certain MHC Antigens like B17, B18, B27 and DR7 were seen more commonly in patients with Arthritis than in patients without Arthritis.

As previously reported by Rajendran CP et al and Neeraja Puri et al ,our study also found that psoriasis vulgaris was the commonest skin type among the patients with arthritis (64.5%).[80] Isolated nail disease with family history of psoriasis and the arthritis typical psoriatic arthritis were observed in 3.6% of cases. Guttate type and erythrodermic types of psoriasis were seen 1 patient each. Comparing the skin type with the arthritis type although psoriasis vulgaris is the commonest skin lesion in patients with symmetric polyarthritis (65.6%) and scalp psoriasis in spondyloarthritis (44.4%) , but this is not statistically significant.

Like other previous studies (Rajendran CP et al, Gladmann et al, Singh et al) our study also showed symmetric polyarthritis as the commonest pattern of joint disease. Predominent DIP Arthritis was observed only in 1 patient(0.9%), but we observed DIP Arthritis in more number of cases along with other sub types. Second major subtype in our study was mixed pattern (axial + peripheral arthritis) in 17.3% of cases. Predominent axial disease was observed in 8.2% of cases. Another study by Amer Ijaz from Pakistan showed that oligoarthritis as the predominent type .[81]

The commonest imaging abnormality in our study patients were soft tissue swelling around the joints in 25.5% of cases. Joint

space narrowing were seen in 15.4% of cases, but the study by Prasad et al observed joint space narrowing as the most common radiological change 62.5% of patients. We found periosteal new bone formation in 1.8% of cases and sacroilitis in 21.8% of cases, among them majority had bilateral asymmetric involvement. It was observed the presence of more than one imaging abnormality in few cases especially in mixed types in our study. We have not analyzed the correlation between the type, severity of imaging abnormality and the duration of the arthritis. This is one of the pitfalls in our study.

According to Brower et al, marginal erosions and joint space narrowing are initial lesions while periosteal new bone formation, osteolysis and ankylosis are seen in advanced stage of disease.[82]

Hyperuricemia was observed in 4.5% of cases, but Lambert and Wright et al found high prevalence of uric acid values above the normal range and this may be due to high cell turnover and increased purine metabolism .[7]

Raised ASO titre was observed in 8.1% of cases when compared to previous author (12.7%) and this signifies the antecedent or current streptococcal infection.[9]

Anterior uveitis was present in 3.6% of cases; among them 2 patients were HLA B27 antigen positive.

Findings (%)	Rajendran CP et al[9]	Our study
Hypruricemia	1.7	4.5
Raised ASO titre	12.7	8.1
Anterior uveitis	1.7	3.6
RF positivity	3.4	6.3
ANA positivity	5.4	14.2
Anti-CCP positivity	-	9.7
Dactylitis	19	21
HLA B 27	-	17.8

In our study, majority of patients with arthritis had low skin disease activity as evidenced by low PASI Score but another study by Prasad et al showed major proportion of patients had moderate to severe skin disease activity (PASI 10 - 30).

In our study, majority of patients with symmetric polyarthritis had skin score of PASI less than 5 (60.9% of symmetric polyarthritis). This is in contrast to the report by previous author showed the majority of patients with arthritis had moderate skin disease activity.[7] We did not find a significant relationship between arthritis sub types and pattern of skin disease like previous studies.[9,83]

Our study showed that baseline mean ESR was more than normal in all patterns of arthritis and highest value observed in mixed type (50.74) and in asymmetric oligoarthritis the mean ESR was 30.41.

Analyzing the correlation between skin disease activity and joint disease activity in our study, there was positive correlation between PASI Score and swollen as well as tender joint count although it was not statistically significant. But we found a statistically significant (p 0.042) positive correlation (0.198) between PASI and mean ESR value at baseline. This positive correlation was supported by various studies.

Elkayam et al showed a significant correlation between PASI score and joint count and Schober's test and cervical spine involvement.[84] In that study they observed simultaneous flare of skin and joint disease more in the proportion of patients who had the onset of psoriasis and joint disease within 1 year. But they did not find association among the group of patients who had separate onset of joint and skin disease. But few other studies showed no association between skin and joint diseases. A prospective study by Jones SM et al among 100 patients with psoriatic arthritis, skin and

nail disease activity did not correlate with the joint severity, joint activity or functional status.[85]

Another study by Amer Ejaz suggests no association between skin disease severity and the development of arthritis.[81]

There was very strong positive correlation between enthesitis score and disease activity score (correlation coefficient 0.585 and p value 0.000).

Anti - CCP antibodies were positive in 9.7% of cases (8 out of 82 patients) .When comparing the anti-CCP positive and negative groups in patients with psoriatic arthritis mean tender and swollen joint count were higher in patients with anti-CCP positivity which is statistically significant .Radiographic abnormalities were significantly more in patients with Anti-CCP positivity (p 0.010).

Inanc N et al found Anti-CCP 2 was positive in 12.5% of patients with psoriatic arthritis and that was associated with symmetrical polyarthritis.[86] In our study all anti-CCP positive patients had features typical of psoriatic arthritis and none of them had features suggestive of RA like juxta articular osteoporosis or nodules. In a prospective analytical study by Korendowych E et al with the aim of determining prevalence and association of anti-CCP

antibodies in psoriatic arthritis, they observed anti-CCP positivity in 5.6% of cases and concluded that anti-CCP antibody positivity was associated with higher number of swollen joints and HLA DR B1 shared epitope, more erosive disease and requiring early DMARD therapy.[87] In that study RF was positive in 8.7% of cases and they did not find an association with clinical, imaging or genetic correlation.

Another study by Nermeen et al they demonstrated Anti-CCP positivity in 17.5% of cases in association with high number of involved joints and erosions as well as functional impairment.[49]

Out of 70 patients analysed ,ANA was positive in 14.2% . According to Lambert , ANA positivity was reported in 7 to 77 % of patients with psoriatic arthritis and these antibodies were thought to react with stratum corneum antigens.[88] Other immunological abnormalities in psoriatic arthritis include anticytokeratin18 and antiepidermal keratin antibodies.[89]

A prospective study by Johnson et al at Toronto Psoriatic Arthritis Clinic showed ANA positivity in 47% of cases and in 14% patients showed significant titre of more than 1 : 80 .[50] In view of association of auto antibodies development with anti TNF drugs

baseline ANA scenning may be useful in patients with psoriatic arthritis for future reference.

At the end of 1 year, 57.5% of patients attained PsARC response and progression from oligoarthritis to poly arthritis was noted in 4.1% of cases. 12 patients lost to follow up. When comparing the baseline ESR in patients who attained PsARC and flare, there was the high baseline ESR value in patients with flare.

From group 1 of study population 37 patients were enrolled for 2 years follow up and at the end of 2 years 18 patients (48.7%) have shown PsARC response and Minimal Disease Activity was noticed in 1 patient.

Persistent disease activity, flare up of symptoms, progression to polyarthritis were noted in 13.5%, 8.1%, 5% of patients respectively. 7 patients lost to follow up.

Comparing the group of patients who have shown improvement response to non-improvement group, mean baseline ESR was higher in nonimprovement group although statistically not significant. One of the limitations of our study is that assessment the radiologic progression was not studied.

One of the prospective outcome studies in early psoriatic arthritis by Kane D et al ,they had followed up 129 patients for 2 years and at the end of 1 year period 26% of patients were in remission and at 2 years 21% in remission. Also they observed low rate of DMARD free remission in 11% of patients at 2 years.[72]

Absence of actively inflammed joints for a period of 12 months is called as 'remission' and according to Gladmann et al after a period of follow up of 2.6 years only 6% of patients showed prolonged remission and 52% of cases had flare .[90]Among our patients 1 out of 37 patients at the end of 2 years follow up showed Minimal Disease Activity but we did not find remission in any patient.

In another follow up study Gladmann DD et al found that during follow up of patients with psoriatic arthritis, for each joint inflammation there was 4% increased risk of damage at the next visit at 6 months later.[91]

CONCLUSION

1) The mean age of the patients in our study was 39.5 years.

2) Slight male preponderance was observed (1.2:1).

3) Skin disease preceding arthritis was noted in majority of patients (56%)and simultaneous onset was found in 19 % of patients.

4) Onset of arthritis after 10 years of psoriasis is uncommon(9%).

5) Psoriasis vulgaris was the commonest skin pattern and symmetric polyarthritis was the commonest subtype of arthritis noted in our study.

6) The prevalence of ANA, anti-CCP and RF positivity in our patients were 14.2%, 9.7 %,6.3% respectively.

7) Anterior uveitis was observed in3.6 % of our patients.

8) Positive correlation between skin and joint disease activity was noticed although statistically not significant.

9) Anti-CCP positive psoriatic arthritis patients had higher number swollen, tender joints and more radiographic damage.

10) At the end of one year follow-up, 57.5% of patients showed PsARC improvement response.

11) At the end of two years follow-up, 48.7% of patients showed PsARC response and 2.7% showed Minimal Disease Activity response.

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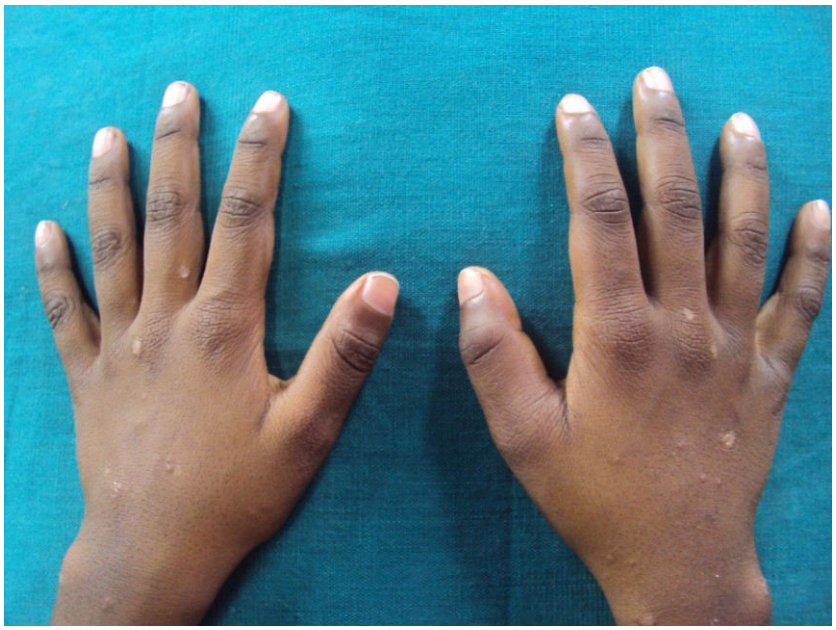
RIGHT THUMB INTERPHALENGEAL JOINT ARTHRITIS

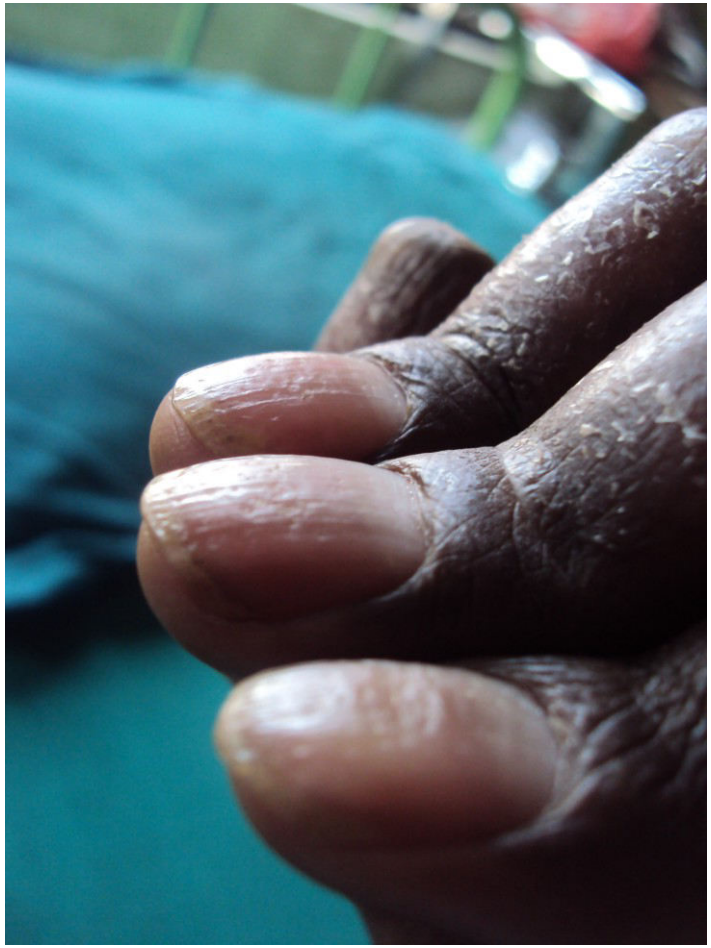


PSORIASIS WITH DEFORMING ARTHRITIS

BILATERAL SACROILIITIS

RIGHT 4TH PROXIMAL PHALANX PERIOSTEAL REACTION

NAIL PITS



SECONDARY ANKYLOSING SPONDYLITIS

A STUDY ON CLINICO- IMMUNOLOGICAL PROFILE AND TREATMENT OUCOME OF PSORIATIC ARTHRITIS

Name: Age: Sex: Occupation:

Address:

D.O.E. RCC No. mobile:

Complaints :

H/o. Present illness:

H/o. Past Illness:

DM- HTN- DYSLIPID- BA- PT-

Personal History:

Treatment History:

Family History:

General Examination :

Height: Weight: BMI:

Pallor: Icterus Lymphadenopathy:

Pedal Edema: Clubbing:

Skin:

PASI:

Nails:

Hair:

Vital Signs : PR BP

Cardiovascular System:

Respiratory System:

Abdomen:

Central Nervous System:

Musculo Skeletal System Examination:

Enthesitis: **Dactylitis:**

MASES:

66SJC: **68TJC:** **BASDAI:**

PGA: **PtGA:**

INVESTIGATIONS :

Haemogram ;

Hb: TC: DC:

PLT: RBC: PCV

ESR:

Immunological :

ASO: RF: CRP:

Anti CCP: HLA B27: ANA :

Bio-Chemistry :

Sugar: Urea: Creatinine:

Uric Acid: Bilirubin: SGOT:

SGPT: ALP: Total Proteins: Albumin:

Total CHO: LDL: HDL: TGL:

Radiography:

REFERRALS :

Dermatology: Ophtholmogy:

Cardiology: **Others :**

FINAL DIAGNOSIS :

TREATMENT : Intra-articular:

S.No	Name	Age	RCC	Sex	Joint Duration	Skin Duration	FIRST SYSTEM	Family History	Comorbid	Skin Type	Joint Type	Imaging	Antibodies
1	Jeyasimman	54	53991	M	1 month	3 yrs	SKIN	--	HT,DM 3yrs	PSV	Asym oligo	STS	ASO
2	DEVIKA	31	54067	F	3YRS	3YRS	SIMULTANEOUS	--	-	PSV +SCALP	SYM POLY	N	-
3	ALPHONSA	34	54064	F	1 MONTH	NEW	SIMULT	-	-	SCALP	SYM POLY	N	ANA
4	VICTOR	32	54203	M	6MONTHS	NEW	JOINT	-	-	SCALP	ASYM OLIGO	-	-
5	RAJA	33	54225	M	NEW	NEW	SIMULT	-	-	SCLP	SYM POLY	STS	-
6	JOTHY	48	54301	F	NEW	1 YR	SKIN	-	-	PSV	SYM POL	STS	-
7	SARAVANAN	27	54311	M	7months	NEW	JOINT	father PSA	-	NAIL	SPA	UNI SI -GR2	-
8	SARGUNAM	49	54367	F	4years	NEW	JOINT	-	-	PSV	SYM POLY	n	-
9	BRASS	65	54538	F	10years	20 yrs	SKIN	-	HT	Ps.V	ASYM OLIG	-	RF
10	KAVITHA	27	53308	F	2months	1 year	SKIN		-	PALMO-PLANT	ASYM OLIG	STS	-
11	MARIASUSAI	32	53305	F	3months	1.5 yrs	SKIN	-	-	PSV	SYM POL	-	-
12	SHAJITHA BANU	28	53307	F	7months	7years	SKIN	-	obese	PSV+SCALP	SYM POL	STS	ACPA
13	SHAKIRA BEE	34	53188	F	9months	7YEARS	SKI N	-	-	PsV	SYM POL	-	-
14	CHANDRA	59	53429	F	6months	NEW	JOINT	-	-	PALMO-PLANT	SYM POLY+DIP	-	-
15	DHANALAKSHMI	47	54063	F	6months	NEW	JOINT		-	SCALP	SYM POL	-	STS
16	MOORTHY	45	53718	M	3months	6months	SIMULT	-	DM	SCALP	SYM POLY	EROSION MCP	-
17	RAJENRAN	45	53695	m	2months	10yrs	SKIN	-	-	PsV	SYM POL	STS	ACPA
18	KAMSALA	40	53663	F	2months	1YEAR	SKIN	-	-	PsV	DIP	-	-
19	SANTHANAKRISI	70	53617	M	1year	1YEAR	SIMULT	-	DM	SCALP+NAIL	SYM POL	osteopenia	RF
20	SANKARAN	44	53607	M	1 MONTH	15YEARS	SKIN	-	-	PsV	SYM POL	EROSIONS	ACPA
21	USHA	33	53580	F	6months	NEW	JOINT	-	-	PsV	SYM POL	-	-
22	SUMATHY	26	53558	F	3years	6MONTHS	JOINT	-	HYPOTHY	PsV	SYM POL	-	-
23	SURESH	20	53530	M	10months	10YEARS	SKIN	-	-	PalmoPlantar	SYMPOLY	STS-knees	-
24	SIVANANTHAN	50	53479	M	1 month	5YEARS	SKIN	-	-	PsV	SYM POLY	-	-
25	GOVINDAN	41	53477	M	1month	19YEARS	SKIN	-	kidn don	ERYTHRODERMI(	SYM POL	STS	UA-7.8,ASO
26	PERUMAL	45	53431	M	6months	NEW	JOINT	-	-	SCLP,NAIL	SYM POL	STS	-
27	MURALI	43	53011	M	1year	7YEARS	SKIN	-	-	PsV	POL+SPA	GR 2 SI	ANA
28	LOGANATHAN	61	53009	M	4years	4YEARS	SIMULT	-	-	PsV	ASYM OLIG	STS	-
29	VEERAKUMAR	47	53081	M	10years	10YEARS	SIMUL	-	HTN.CAD	PsV	SYM POL	JSN hand JOINTS	-
30	SARALA	42	54230	F	1year	10YEARS	SKIN	-	HTN	PsV	SYM POL	STS	RF
31	VIJAYALAKSHMI	26	54053	F	1.5months	NEW	SIMULT	-	-	PalmoPlantar	SYM POL	STS	ACPA
32	DEVARAJ	31	53951	M	5years	NEW	JOINT	-	-	SCALP	SPA+HIPS	hipjsn,SI B\L	B27
33	VADIVEL	37	53937	M	2weeks	NEW	SIMULT	-	-	SCALP	POLY-DIP	STS	-
34	LAKSHMI	43	53805	F	2months	NEW	SIMULT	-	father ps	NAILS	MIXED	STS,B|L SI	ANA
35	MADHU	50	53301	F	1month	2YEARA	SKIN	-	-	SCALP	SYM POL	STS	-
36	DEVARAJ	54	53210	M	1.5months	1YEAR	SKIN	-	-	PsV	SYM POL	-	RF
37	A.A.PRABU	26	53263	M	1 year	5YEARS	SKIN	-	-	PsV	SPA	Gr3 SI B\L,HIPS	ASO
38	CHINNATHAMBI	55	53768	M	1week	2 years	SKIN	-	-	PsV	SYM POL	-	-
39	RICHARD	35	54163	M	25years	7YEARS	JOINT	-	-	PSV	MIXED	Grd 4 SI B/L	UA-9,ASO
40	MANIKANDAN	22	53406	M	3years	1.5YEARS	JOINT	-	-	PalmoPlantat	SYM POL	STS	-
41	SUNDARAM	47	53993	M	2weeks	6YEARS	SKIN	-	Ret.Pig	PsV	ASY.OLIG	STS	ANA
42	VALLI	35	54339	F	5years	10YEARS	SKIN	motherPsA	-	PsV	SYM POL	periost react	-
43	SELVI	31	54607	F	3months	NEW	SIMULT	-	-	SCALP	SYM POL	STS	-
44	RAJA	40	54659	M	4months	NEW	JOINT	-	HTN	Plantar	SPA	Grde 3 B/L	B27
45	MEENAKSHI	56	54665	M	6months	NEW	JOINT	-	-	PsV	ASYM OLIG	-	-

S.No	Name	Age	RCC	Sex	Joint Duration	Skin Duration	FIRST SYSTEM	Family History	Comorbid	Skin Type	Joint Type	Imaging	Antibodies
46	suresh	41	51677	M	8months	2YEARS	SKIN	-	LDL	SCLP	SYM POL	STS	-
47	KANNIAPPAN	50	54679	M	1year	30YEARS	SKIN	fatherPS	-	NAILS	MIXED	Grd 2SI B/L	-
48	VIJAYA	27	54842	F	2months	NEW	SIMULT	-	-	PSV SCLP	SYM POL	STS	-
49	ADHIKESAVAN	17	54862	M	3years	6YEARS	SKIN	-	-	PsV	JUV PSA	-	-
50	VENI	31	54882	F	1month	NEW	SIMUL	-	-	SCLP	ASYM OLIG	-	ANA
51	RAMAMOORTHY	42	54925	M	5years	8YEARS	SKIN	-	HTN	PsV	SYM POL	-	-
52	CHITRA	26	54907	F	3months	NEW	SIMULT	-	-	PsV	SYM POL	-	-
53	MdHussain	53	54930	M	6yrs	20YEARS	SKIN	-	-	PsV	MIXED	MUTILANS	UA-7.7
54	KOTHANDAN	37	54478	M	1month	1YEAR	SKIN	-	-	PsV	ASYM OLIG	-	-
S	SULOCHANA	45	54522	F	1month	3YEARS	SKIN	-	HTN	PalmoPLantar	SYM POL	STS	RF
56	VALARMATHY	51	54590	F	2years	NEW	JOINT	-	HTN	PsV	SYM POL	-	-
57	UMAMAHESWAR	40	54602	F	2years	10YEARS	SKIN	-	HYPOTHY	PsV	SYM POL	-	-
58	VELMURUGAN	40	55003	M	6years	2MONTHS	JOINT	-	UVEITIS	PsV	MIXED	GR4 B/L	B27
59	SHANMUGAM	34	54672	M	6months	8YEARS	SKIN	-	-	PsV	SYM POL	GR 2 SI	-
60	BHAVANI	30	54400	F	3months	2YEARS	SKIN	-	OBESE	PsV	ASYM OLIG	-	ANA
61	SHAKILA	45	54829	F	2months	10YEARS	SKIN	-	-	PsV	SYM POL	-	-
62	BASKAR	29	54530	M	3months	2YEARS	SKIN	-	-	PsV	SYM POL	HIP JSN	AS0
63	RABECCAL	54	54595	F	1year	6YEARS	SKIN	-	-	PsV	SYM POL	-	-
64	SIVAGNANAM	69	54237	M	1month	NEW	SIMULT	-	postCABG	PsV	SYM POL	HIP JSN	RF
65	SRINIVASAN	48	54780	M	1month	2 YEARS	SKIN	-	-	PsV	SYM POL	-	ANA
66	RABECCA	21	54487	F	2MONTHS	NEW	SIMULT	-	-	PALMO-PLANT	ASYM OLIGO	-	-
67	SURESHBABU	41	54677	M	7YEARS	NEW	JOINT	-	HTN	SCALP	SPA	GRDE 2 B/L	B27
68	VIJAYA	47	55163	F	3months	10YEARS	skin	-	RtUVEITIS	PsV	SYM POL	-	-
69	LATHA	35	55217	F	3years	3YEARS	SIMULT	daugh PSA	LtUVEITIS	PsV	MIXED	Gr2 SI	-
70	GEETHA	38	55091	F	3years	5YEARS	SKIN	-	-	PsV	SYM POL	STS	ANA
71	RUPAVATHY	34	55090	F	4months	69MONTHS	SKIN	-	-	SCLP	SYM POL	JSN	ACPA
72	REGINAMARY	31	55089	F	2months	NEW	SIMULT	-	-	PSV	ASYM OLIGO	-	-
73	PANJAVARNAM	62	55055	F	2years	NEW	JOINT	-	-	SCLP	SYM POL	STS	-
74	sudha	29	55270	F	2MONTHS	3YEARS	SKIN	-	-	PsV	MIXED	3GRDE SI	-
75	RAMESHKUMAR	37	55273	M	3years	NEW	JOINT	-	-	SCLP	SPA	N	-
76	FATHIMABANU	55	55335	F	8years	NEW	JOINT	mother ps	HTN,uveit	NAILS	ASYM OLIG	-	-
77	NEJMA	37	55349	F	1year	2.5YEARS	SKIN	-	-	PsV	SYM POL	-	-
78	SHERIF	27	55407	M	6months	1.5years	SKIN	-	-	PsV	SYM POL	-	-
79	PONNI	51	55425	F	5months	20YEARS	SKIN	-	-	PsV	SYM POL	-	ANA
80	SEKAR	40	55504	M	5months	2YEARS	SKIN	-	-	PsV	SYM POL	-	-
81	BAKTHAVATCHA	48	55234	M	6months	1YEAR	SKIN	-	-	PsV	SYM POL	JSN	ACPA
82	MANONMANI	46	55208	F	3months	25YEARS	SKIN	-	-	PsV	ASYM OLIG	-	
83	SIVANANDAN	55	55O99	M	2years	10YEARS	SKIN	-	-	PsV	SYM POL	EROSIONS	ACPA
84	UMA	40	55362	F	3months	15YEARS	SKIN	-	-	PsV	SYM POL	-	-
85	PRADEEPKUMAR	28	55129	M	6MONTHS	10YEARS	SKIN	-	-	PsV	SPA	B/L GR2	-
86	ANREWS	34	55073	m	21yrs	NEW	JOINT	motherPs	CATARAC	PsV	SPA-JAS	B/L GR3,hip	ASO
87	ARUMUGAM	49	54084	M	1year	4YEARS	SKIN	-	-	PsV	SYM POL	STS,EROSIONS	RF
88	SAROJA	51	55424	F	3YEARS	14YEARS	SKIN	-	-	PsV	SYM POL	PERI REACT	-
89	RAJKUMAR	35	55219	M	4months	7YEARS	SKIN	-	-	PsV	ASYM OLIG	-	-
90	JAIGANESH	26	55245	M	2years	13YEARS	SKIN	-	DM,oldPT	PsV	MIXED	GRD 4 SI b/l	-

S.No	Name	Age	RCC	Sex	Joint Duration	Skin Duration	FIRST SYSTEM	Family History	Comorbid	Skin Type	Joint Type	Imaging	Antibodies
91	VALLARASU	9	55187	M	1year	3MONTHS	JOINT	-	-	GUTTATE	JUV PSA	STS	ASO
92	PARIMALA	47	55324	F	1year	1YEAR	SIMULT	sis PS	-	PsV	SYM POL	JSN	ACPA
93	SHANMUGAM	49	55625	M	8months	1.5YEARS	SKIN	-	-	PsV	ASYM OLIG	-	-
94	RAJU	38	55605	M	4months	8YEARS	SKIN		PLHA-6yrs	PsV	ASYM OLIG	PERIOST	-
95	AMUTHA	30	55517	F	6months	NEW	JOINT	-	-	PsV	ASYM OLIG	-	-
96	anniah	52	55702	M	4months	10YEARS	SKIN	-	-	PsV	SYM POL	-	-
97	SIVAN	45	55638	M	2months	2YEARS	SKIN	-	-	PsV	SYM POL		ASO
98	DEVI	31	55609	F	3MONTHS	1YEAR	SKIN	-	-	PSV	SYM POL	-	ANA
99	SETTU	47	55670	M	1year	NEW	JOINT	-	-	SCALP	SYM POL	-	-
100	SUNDARAM	49	55822	M	1year	9YEARS	SKIN	-	-	PsV	SYM POL	EROSIONS	
101	TAMILARASAN	19	55895	M	1year	NEW	JOINT	-	-	PsV	MIXED	GRDE 2B/L	ASO
102	ELANGOVAN	60	55927	M	6years	8YEARS	SKIN	-	-	SCALP	SPA	GRDE 4B/L	-
103	BALAKRISHNAN	20	51541	M	17years	NEW	JOINT	-	RF,U.A,STON	PLANTAR	JUV SPA	GRDE 2 SI B/L	UA-8
104	venkatesan	37	55950	m	1year	NEW	JOINT	-	-	Pal+Plantar	spa	GRDE3SI B/L	-
105	MASTHAN	42	56049	M	2months	new	SIMULT		B27 +	scalp	spa	grde3 si	B27
106	SHANTHI	40	56070	F	1YEAR	3YEARS	SKIN	-	-	PSV	SYM POL	-	-
107	AKSARA	13	55912	F	3MONTHS	3MONTHS	SIMULT	-	-	PSV	JUV PSA	-	-
108	AMSALEKHA	21	55798	F	3MONTHS	2YEARS	SKIN	-	-	PSV	ASYM OLIG	-	-
109	SATHYARAJ	28	56040	M	2YEARS	5MONTHS	JOINT	-	-	PSV	MIXED	GRDE2B/L+JSN	UA-9
110	TONY	28	56081	M	2YEARS	9YEARS	SKIN	-	-	PSA	SYM POL	EROSIONS	-

At Entry											AT 1 YEAR						
DMARD	66 SJC	68 TJC	PGA	PtGA	ESR	CRP	Dacty	MASES	BASDAI	PASI	66 SJC	68 TJC	PGA	PtGA	ESR	CRP	Dacty
MTx 15mg	3	4	4	4	19MM	+	Rt 3,4,5 fingers	-		9.3	-	2	1	2	25	+	1
MTX 15MG	16	20	4	5	45mm	+	-	2		4.6	3	6	2	2	13	+	-
MTX15MG	10	16	4	5	50MM	+	-	5	-	2.2	6	9	3	3	35	+	-
IAS	4	4	3	2	16mm	+	-	-		2	0	1	1	1	12	-	-
MTX 15MG	8	10	4	5	7	+	-	2		1.8	5	8	2	3	21	-	-
MTX15MG	8	8	4	5	35mm	+	-	3		4.2	2	2	2	2	12	-	-
MTX	-	-	3	3	5mm	-	-	1	5	-	-	-	3	3	13	-	-
MTX	20	24	5	5	59MM	+	-	4		3.6	10	18	5	4	41	+	-
MTX	4	4	3	3	44MM	+	-	9		12.2	1	1	1	1	23	+	-
MTX	3	3	3	3	6mm	-	4TH TOE	-	-	1.8	LOST	FOLLOWUP					
MTX	12	15	4	5	67MM	+	2nd toe	4	-	13.2	4	8	2	2	44	+	+
MTX	14	18	4	5	87mm	+	-	7	-	5.4	6	8	3	3	32MM	+	-
MTX	8	12	3	4	65MM	+	-	8		20	5	8	4	4	32MM	+	-
MTX	14	17	4	5	50MM	+	4th toe	2	-	1.2	6	10	4	3	34MM	+	-
MTX	8	11	3	4	43MM	+	-	-	-	1.6	6	10	4	4	43MM	+	-
MTX	12	16	4	5	70MM	+	2nd toe	-	-	1.2	4	5	2	3	43MM	+	-
MTX	20	22	4	5	76MM	+	-	8	-	7.2	13	15	5	5	45MM	+	-
MTX	6	8	3	3	40MM	+	-	2	-	7.6	5	7	3	3	32MM	-	-
MTX	8	12	4	3	54MM	+	-	3	-	5.2	5	9	4	3	43MM	-	-
MTX	10	11	4	4	80MM	+	-	2	-	4.4	12	14	5	5	65MM	+	-
MTX	8	11	4	4	67MM	+	-	7	-	21.2	5	15	5	4	54MM	-	-
MTX	12	17	5	4	40mm	+	-	-	-	7					LOST FOLLOWUP		
MTX	20	26	5	5	70mm	+	2nd finger	2	-	1.2							
MTX	12	16	5	4	29MM	+	-	3	-	12	3	8	3	2	21mm	-	-
MTX	8	10	5	5	50mm	+	4th toe	10	-	32.2	4	8	3	3	49mm	+	+
MTX	14	16	4	4	19mm	-	-	2	-	1.2	4	10	3	2	24mm	-	-
MTX+SSZ	7	9	4	4	5mm	+	-	2	2.5	4.1	4	4	2	2	12mm	-	-
MTX	4	4	4	4	43mm	+	-	8	-	3.4	3	5	2	3	23mm	-	-
MTX	7	9	5	4	60mm	+	-	6	-	12.2	8	12	3	4	45mm	-	-
MTX	14	16	5	5	35mm	+	-	3	-	4.2	9	11	4	3	32mm	-	-
MTX	14	15	5	4	48mm	+	-	3	-	1.6	8	9	3	3	21mm	-	-
MTX	-	4	5	5	31mm	+	-	3	6.5	1							
MTX	7	8	4	3	35mm	-	-	-	-	1	4	8	3	4	31mm	-	-
MTX	8	10	5	4	76mm	+	-	4	5	-	4	6	3	3	43mm	+	-
MTX	14	17	5	5	80mm	+	-	4	-	1.2							
MTX	10	13	5	4	28mm	+	4th toe	4	-	4.8	8	11	4	4	54mm	+	-
.TKR,mtx	6	8	5	5	60mm	+	4th toe	6	6.5	12.2	4	5	4	3	50mm	+	-
MTX	8	9	4	4	65mm	+	-	8	-	12							
MTX	7	12	5	5	65MM	+	1great toe	7	6.5	21.2							
MTX	14	16	5	4	27mm	+	-	4	-	2	6	11	4	5	26mm	+	-
MTX	4	4	3	4	50mm	+		1	-	3.2	5	7	4	4	25mm	+	-
MTX	11	13	4	4	58mm	+	-	-	-	3.8	8	10	4	4	23mm	-	-
MTX	9	11	4	4	50mm	+	2	2	-	1.2	6	8	4	3	24mm	-	-
SSZ	-	4	4	4	34MM	-	-	2	5.5	1.6	-	2	2	2	16mm	-	-
MTX	4	4	4	3	15MM	_	-	6	-	9.2	4	7	3	3	29MM	-	1

At Entry											AT 1 YEAR						
DMARD	66 SJC	68 TJC	PGA	PtGA	ESR	CRP	Dacty	MASES	BASDAI	PASI	66 SJC	68 TJC	PGA	PtGA	ESR	CRP	Dacty
MTX	12	14	4	4	46mm	+	-	5	-	1.2	3	8	2	2	32mm	+	-
MTX	2	6	5	4	10mm	-	-	8	6	4	1	3	3	2	21mm	-	-
MTX	15	18	5	5	83mm	+	-	2	-	4.6	5	8	3	2	31mm	+	-
-	2	2	5	4	43mm	+	-	-	-	-							
MTX	3	4	4	3	30mm	+	1	2	-	1.1	4	4	4	3	18mm	+	1
MTX	12	15	5	4	70MM	+	-	4	-	6.8	5	8	3	3	43mm	+	-
MTX	15	18	5	4	68MM	+	-	4	-	5.2	9	12	4	3	45mm	+	-
MTX	18	18	5	5	69MM	+	2	9	6	21.1	10	12	4	3	43mm	-	3
MTX	3	4	4	3	41mm	-	1	4	-	19.4	2	3	2	2	21mm	-	3
MTX	8	14	5	4	55mm	+	1	2	-	1.6	6	7	4	4	65mm	+	-
MTX	9	11	4	4	32mm	+	-	2	-	4.2	4	6	3	2	-	-	-
MTX	6	10	4	4	65MM	+	-	3	-	4.4	2	6	3	2	29MM	-	-
ETA	12	15	5	5	100MM	+	-	7	7	14.4	5	5	4	3	76mm	+	-
MTX	11	16	5	5	60MM	+	-	8	-	11.2	4	8	3	3	42mm	+	-
MTX	4	4	4	4	50mm	+	-	2	-	2.2	4	4	3	2	38mm	+	-
MTX	8	7	4	4	28mm	+	-	4	-	4	4	6	3	2	30mm	+	-
MTX	5	8	3	5	24mm	+	-	4	-	7.2	3	3	2	2	27mm	-	-
MTX	9	11	4	4	39	+	-	5	-	9.6							
MTX	13	15	5	5	130mm	+	-	2	-	3.6	5	7	3	3	65mm	-	-
MTX	8	10	5	4	56MM	+	-	2	-	2.2	4	5	3	3	27mm	-	-
MTX	3	4	3	4	23MM	-	-	1	-	1.2	2	5	3	3	24MM	-	-
INF-3DOS	-	-	4	5	41MM	+	-	3	6.5	0.6	ST FOLLOWUP						
MTX	9	10	4	4	18mm	+	-	3	-	4.2	6	8	3	2	18mm	-	-
MTX	8	14	5	4	38MM	+	-	3	4.5	2.8	4	5	3	3	19mm	+	-
MTX	8	12	4	5	54MM	-	1	-	-	9.2	6	10	4	4	43MM	-	-
MTX	13	16	5	5	60mm	-	lt 4th toe	2	-	11.2	4	5	3	2	34mm	-	-
MTX	3	3	3	3	60mm	+	-	5	-	4	5	6	5	4	39MM	+	-
MTX	8	9	4	3	28mm	-	4th fing	2	-	0.8	6	9	2	3	31mm	-	-
MTX	8	10	5	4	36mm	+	-	7	6	2.4							
MTX	2	4	4	4	15MM	+	1	4	4.5	0.9							
IAS	2	4	3	3	31mm	+	-	-	-	-							
MTX	9	11	4	5	37MM	+	-	7	-	9.2							
MTX	6	9	3	4	45MM	+	-	4	-	6.4							
MTX	7	10	4	4	46MM	+	-	4	-	7.6							
MTX	9	11	4	4	40MM	+	-	-	-	5.4							
MTX	8	10	4	4	54mm	+	-	4	-	4.2	5	4	3	3	23mm	-	-
MTX	3	3	3	3	10mm	-	-	1	-	1.2							
MTX	12	14	4	5	60MM	+	-	7	-	9.2	6	7	2	2	15mm	-	-
MTX	6	8	4	5	25mm	+	-	2	-	4.2							
SSZ	-	-	3	5	27MM	+	-	4	5.5	4.8							
ETANERC	2	4	5	5	60mm	+	-	6	6.5	2.2	2	4	3	3	35mm	-	-
MTX	8	9	4	5	46MM	+	-	8	-	7.4	4	5	2	3	21mm	-	-
MTX	8	10	5	5	60mm	+	-	2	-	2.2							
MTX	3	4	3	5	49MM		1	6	-	7.8	3	4	3	4	31MM	-	-
-	4	6	5	5	77mm	+	-	6	7	12.4	3	4	4	5	51mm	+	-

At Entry											AT 1 YEAR						
DMARD	66 SJC	68 TJC	PGA	PtGA	ESR	CRP	Dacty	MASES	BASDAI	PASI	66 SJC	68 TJC	PGA	PtGA	ESR	CRP	Dacty
MTX	7	9	4	4	40mm	+	-	3	-	7.6	-	-	-	-	-	-	-
MTX	6	6	4	5	19mm	-	-	3	-	3.6							
MTX	4	4	3	4	5mm+	+	-	2	-	9.2							
MTX	3	4	4	5	4mm	-	1	7	-	12.2							
MTX	4	4	3	5	60mm	+	-	4	-	7.6							
MTX	13	15	5	5	65mm	+	-	3	-	2.6							
MTX	8	9	4	4	35MM	+	-	4	-	2.2							
MTX	12	14	5	4	34MM	+	-	4	-	2.2							
MTX	11	16	5	5	30MM	+	-	2	-	1							
MTX	12	12	5	5	62MM	-	-	4	-	4,0							
MTX	3	4	5	5	90mm	+	-	6	6.5	8							
ETARNER	-	-	5	5	125MM	+	-	2	6.6	0.4							
MTX	3	3	4	4	52mm	+	-	3	5.5	2.4							
MTX	2	6	3	4	48MM	+	-	5	6	1.4							
-	3	2	4	4	25mm	+	-	4	-	0.7							
MTX	8	11	4	5	46MM	+	-	4	-	6.2							
NSAIDS	-	2	2	3	29MM	-	-	4	-	1.6							
MTX	3	4	3	3	27MM	-	-	4	-	1.9							
ETA+CYC	6	12	5	5	58MM	+	-	8	5	36.8							
ETA	8	8	5	5	45MM	+	1	1	-	1.2							

			2 YEARS									
MASES	BASDAI	OUTCOME	66 SJC	68 TJC	PGA	PtGA	ESR	CRP	Dacty	MASES	BASDAI	OUTCOME
-		PSARC	-	1	1	1	24MM	-	-	-	-	PSARC
-		PSARC	2	5	3	3	26MM	-	-	-	-	PSARC
-		PSARC	6	8	4	5	43MM	-	-	3	-	FLARE
-		PSARC	-	1	1	1	8mm	-	-	-	-	MDA
-		PSARC	LOST		LOST							LOST
-		PSARC	2	4	2	2	23MM	-	-	-	-	PSARC
	5											
4		PSARC										
-		PSARC										
												LOST
1		PSARC	2	4	3	2	23MM	-		-		PSARC
4		PSARC	1	4	2	1	43MM	-	-	-	-	PSARC
-		-	3	9	4	4	34MM	-	-			PERSIST
-		PSARC	2	4	2	2	32MM	-	-	-	-	PSARC
-		-										
-		PSARC	2	6	2	2	23MM	-	-	-	-	PSARC
-		-	12	14	5	5	65MM	+	-	-	-	PERSIST
-		-	4	9	5	4	49MM	-	-	-	-	PERSIST
-		-	4	5	3	3	32MM	-	-	-	-	PSARC
3	-	FLARE	13	15	5	5	54MM	+	-	-	-	FLARE
2	-	PERSIST	7	12	5	4	53MM	+	-	-	-	PERSIST
												LOST
												LOST
2	-	PSARC	2	5	2	1	12mm	-	-	-	-	PSARC
2	-	-	7	11	4	5	55MM	+	+	-	-	PERSIST
-	-	PSARC	2	5	2	2	20mm	-	-	-	-	PSARC
1	2	PSARC	1	3	2	1	11mm	-	-	3	-	PSARC
1	-	PERSIST	4	8	4	3	21mm	-	-	-	-	POLY
-	-	PERSIST	3	4	3	2	39mm	-	-	-	-	PSARC
-	-	PSARC	1	3	2	2	26MM	+	-	-	-	PSARC
-	-	PSARC	2	5	2	2	19mm	-	-	-	-	PSARC
												LOST
-	-	PERSIST	8	8	4	4	45MM	+	-	-	-	FLARE
-	4	PSARC	2	5	2	2	32mm	-	-	-	4	PSARC
												LOST
-	-	PERSIST	7	7	3	4	32mm	+	-	-	-	PSARC
2	6	PSARC	2	5	3	3	34mm	+	-	-	6	PSARC
												LOST
												LOST
-	-	FLARE	3	5	3	2	21mm	+	-	-	-	PSARC
-	-	POLY	4	8	4	4	39MM	+	-	-	-	P0LY
-	-	PSARC										
-	-	PERSIST										
4.5	-	-										
-	-	POLY										

			2 YEARS									
MASES	BASDAI	OUTCOME	66 SJC	68 TJC	PGA	PtGA	ESR	CRP	Dacty	MASES	BASDAI	OUTCOME
-	-	PSARC										
-	5	PSARC										
-	-	PSARC										
		LOST										
-	-	PERSIST										
-	-	PSARC										
-	-	PSARC										
5.5	-	PSARC										
-	-	PSARC										
-	-	PSARC										
-	-	PSARC										
-	-	PSARC										
6		PSARC										
-		PSARC										
2	-	PERSIST										
-	-	PSARC										
-	-	PSARC										
		LOST										
-	-	PSARC										
-	-	PSARC										
-	-	PERSIST										
		LOST										
-	-	PSARC										
-	-	PSARC										
-	-	PERSIST										
-	-	PSARC										
-	-	POLY										
-	-	PERSIST										
-	-	PSARC										
2	-	PSARC										
-	4.5	PERSIST										
-	-	PSARC										
-	-	PERSIST										
-	5.5	PERSIST										

			2 YEARS								
MASES	BASDAI	OUTCOME	66 SJC	68 TJC	PGA	PtGA	ESR	CRP	Dacty	MASES	BASDAI	OUTCOME
-	-	LOST										

சுய ஒப்புதல் படிவம்

ஆய்வு செய்யப்படும் தலைப்பு

"சாம்பல் படை முடக்குவாத நோயின் தன்மை குறித்த ஆய்வு"

ஆராய்ச்சி நிலையம் : முடக்குவாதவியல் துறை,
சென்னை மருத்துவக்கல்லூரி மற்றும்
அரசு பொது மருத்துவமனை,
சென்னை - 600 003.

பங்கு பெறுபவரின் பெயர் :

பங்குபெறுபவரின் எண் :

பங்கு பெறுவர் இதனை (✓) குறிக்கவும்.

மேலே குறிப்பிட்டுள்ள மருத்துவ ஆய்வின் விவரங்கள் எனக்கு விளக்கப்பட்டது. என்னுடைய சந்தேகங்களை கேட்கவும், அதற்கான தகுந்த விளக்கங்களை பெறவும் வாய்ப்பளிக்கப்பட்டது. ☐

நான் இவ்வாய்வில் தன்னிச்சையாகதான் பங்கேற்கிறேன். எந்த காரணத்தினாலோ எந்த கட்டத்திலும் எந்த சட்ட சிக்கலுக்கும் உட்படாமல் நான் இவ்வாய்வில் இருந்து விலகி கொள்ளலாம் என்றும் அறிந்து கொண்டேன். ☐

இந்த ஆய்வு சம்பந்தகமாகவோ, இதை சார்ந்த மேலும் ஆய்வு மேற்கொள்ளும் போதும் இந்த ஆய்வில் பங்குபெறும் மருத்துவர் என்னுடைய மருத்துவ அறிக்கைகளை பார்ப்பதற்கு என் அனுமதி தேவையில்லை என அறிந்து கொள்கிறேன். நான் ஆய்வில் இருந்து விலகிக் கொண்டாலும் இது பொருந்தும் என அறிகிறேன். ☐

இந்த ஆய்வின் மூலம் கிடைக்கும் தகவல்களையும், பரிசோதனை முடிவுகளையும் மற்றும் சிகிச்சை தொடர்பான தகவல்களையும் மருத்துவர் மேற்கொள்ளும் ஆய்வில் பயன்படுத்திக்கொள்ளவும் அதை பிரசுரிக்கவும் என் முழு மனதுடன் சம்மதிக்கிறேன். ☐

இந்த ஆய்வில் பங்கு கொள்ள ஒப்புக்கொள்கிறேன். எனக்கு கொடுக்கப்பட்ட அறிவுரைகளின்படி நடந்து கொள்வதுடன் இந்த ஆய்வை மேற்கொள்ளும் மருத்துவ அணிக்கு உண்மையுடன் இருப்பேன் என்றும் உறுதியளிக்கிறேன். என் உடல் நலம் பாதிக்கப்பட்டாலோ அல்லது எதிர்பாராத வழக்கத்திற்கு மாறான நோய்க்குறி தென்பட்டாலோ உடனே அதை மருத்துவ அணியிடம் தெரிவிப்பேன் என உறுதி அளிக்கிறேன். ☐

இந்த ஆய்வில் எனக்கு இரத்தம், சிறுநீர், எக்ஸ்ரே, ஸ்கேன் பரிசோதனை செய்துகொள்ள நான் முழு மனதுடன் சம்மதிக்கிறேன். ☐

பங்கேற்பவரின் கையொப்பம் ..... இடம் ..... தேதி

கட்டைவிரல் ரேகை

பங்கேற்பவரின் பெயர் மற்றும் விலாசம் .....

ஆய்வாளரின் கையொப்பம் ..... இடம் ..... தேதி

ஆய்வாளரின் பெயர் .....

PATIENT CONSENT FORM

Study Title : A study on Clinico- immunological profile and treatment outcome in patients with Psoaritic Arthritis

Participant Name: Date :

Age: RCC No :

Sex:

The details of the study have been provided to me in writing and explained to me in my own language.

I confirm that I have understood the above study and had the opportunity to ask questions.

I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason, without the medical care that will normally be provided by the hospital being affected.

I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose (s).

I have been given an information sheet giving details of the study.

I fully consent to participate in the above study.

Signature of the participant

INFORMATION SHEET

- We are conducting a study on Psoriatic Arthritis among patients attending Government General Hospital, Chennai and for that your Co-operation may be valuable to us.
- The privacy of the patients in the research will be maintained throughout the study. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.
- Taking part in this study is voluntary. You are free to decide whether to participate in this study or to withdraw at any time; your decision will not result in any loss of benefits to which you are otherwise entitled.
- The result of the special study may be intimated to you at the end of the study period or during the study if anything is found abnormal which may aid in the management or treatment.

Signature of Investigator

Signature of Participant

Date:

ஆய்வு குறித்தான தகவல்

சென்னை அரசு பொது மருத்துவமனைக்கு வரும் நோயாளிகளிடம் இருக்கும் சாம்பல்படை முடக்குவாத நோய் பற்றிய ஆராய்ச்சி இங்கு நடைபெற்று வருகின்றது.

நீங்களும் இந்த ஆராய்ச்சியில் பங்கேற்க நாங்கள் விரும்புகிறோம். அதனால் தங்களது நோயின் ஆய்வறிக்கையோ அல்லது சிகிச்சையோ பாதிப்புக்கு ஏற்படாது என்பதையும் தெரிவித்துக் கொள்கிறோம்.

முடிவுகளை அல்லது கருத்துகளை வெளியிடும் போதோ அல்லது ஆராய்ச்சியின் போதோ தங்களது பெயரையோ அல்லது அடையாளங்களையோ வெளியிடமாட்டோம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த ஆராய்ச்சியில் பங்கேற்பது தங்களுடைய விருப்பத்தின் பேரில்தான் இருக்கிறது. மேலும் நீங்கள் எந்நேரமும் இந்த ஆராய்ச்சியிலிருந்து பின் வாங்கலாம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த சிறப்புப் பரிசோதனைகளின் முடிவுகளை ஆராய்ச்சியின்போது அல்லது ஆராய்ச்சியின் முடிவின்போது தங்களுக்கு அறிவிக்குப்படும் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

ஆராய்ச்சியாளர் கையொப்பம் பங்கு பெறுபவரின் கையொப்பம்

தேதி:

INSTITUTIONAL ETHICS COMMITTEE
MADRAS MEDICAL COLLEGE, CHENNAI -3

Telephone No: 04425305301
Fax : 044 25363970

CERTIFICATE OF APPROVAL

To
Dr. R. Ragunathan
PG in DM Rheumatology
Madras Medical College, Chennai-3,

Dear Dr. R. Ragunathan

The Institutional Ethics Committee of Madras Medical College reviewed and discussed your application for approval of the proposal entitled " A study on clinico immunological profile and treatment oucome of Psoriatic Arthritis" No. 17012011.

The following members of Ethics Committee were present in the meeting held on 28.01.2011 conducted at Madras Medical College, Chennai -3.

1. Prof. S.K. Rajan, MD	– Chairperson
2. Prof. A. Sundaram, MD Dean i/c , Madras Medical College, Chennai -3	– Member Secretary
3. Prof R. Sathianathan Director , Institute of Psychiatry, MMC,Ch-3	– Member
4. Prof R. Nandhini, MD Director, Institute of Pharmacology, MMC, Ch-3	– Member
5. Prof. Geetha Subramanian, MD,DM Prof. & Head , Dept. of Cardiology, MMC, Ch-3	– Member
6. Prof. Md. Ali, MD, DM Professor & Head ,,Dept. of MGE, MMC, Ch-3	– Member
7. Thiru. T.S. Bharathidasan Administrative Officer, MMC, Chennai -3	– Layperson
8. Thiru. S. Govindasamy . BA.BL	– Lawyer
9. Tmt. Arnold Soulina	– Social Scientist

We approve the Proposal to be conducted in its presented form.

Sd /. Chairman & Other Members

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information / informed consent and asks to be provided a copy of the final report

Member Secretary, Ethics Committee

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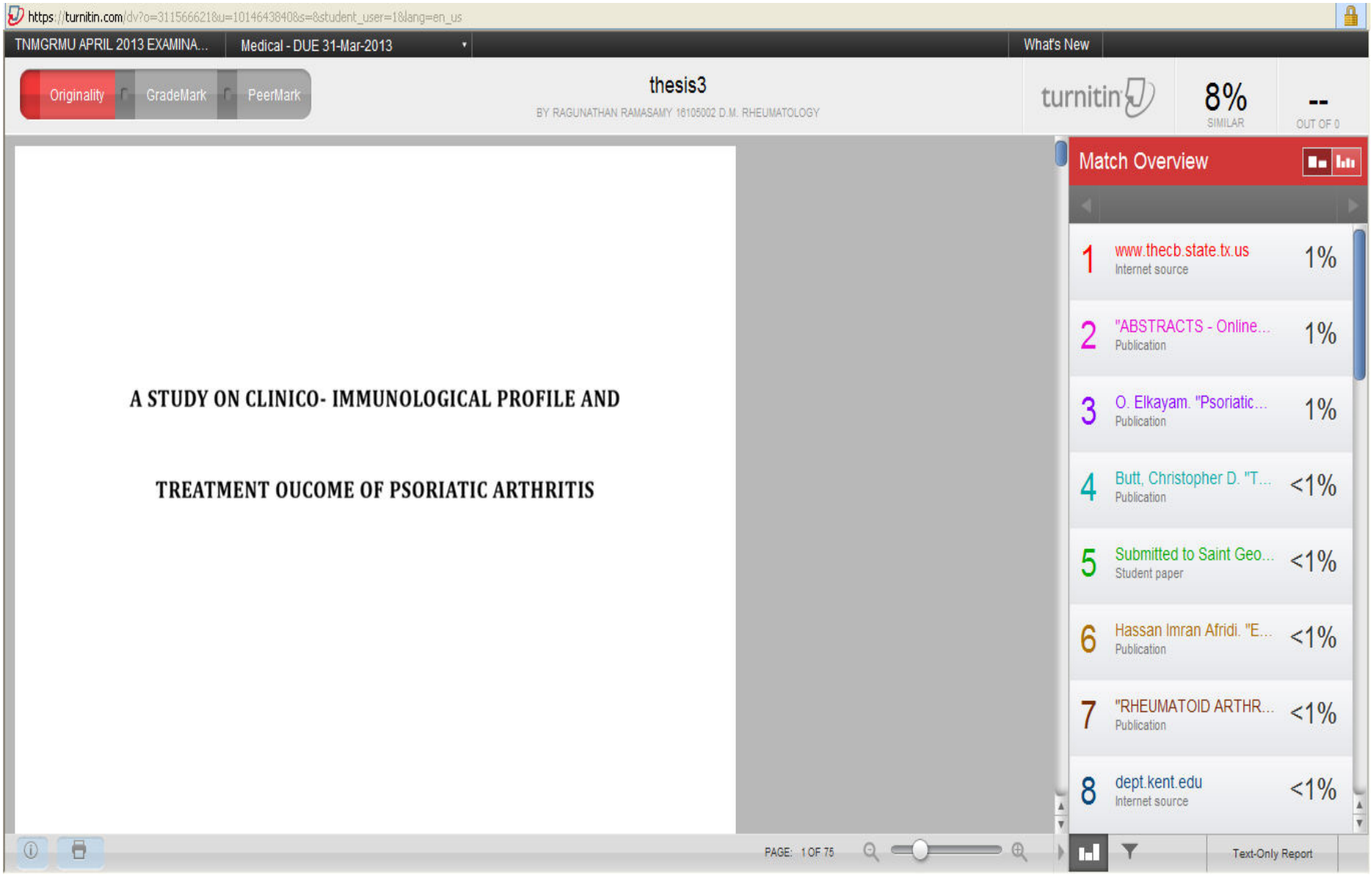
A STUDY ON CLINICO- IMMUNOLOGICAL PROFILE AND TREATMENT OUCOME OF PSORIATIC ARTHRITIS AIMS AND OBJECTIVES 1) To study the clinical profile of patients with psoriatic arthritis. 2) To assess the correlation between skin disease and arthritis in patients with psoriatic arthritis. 3) To study the immunological profile of patients with psoriatic arthritis. 4) To assess the outcome of patients with psoriatic arthritis. INTRODUCTION: Robert Willan, the British dermatologist described psoriasis as an independent disease in 18-th century.1The French Physician Baron Jean Louis Alibert first described the association between the psoriasis and psoriatic arthritis in 1918. 2 Initial clinical features of...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